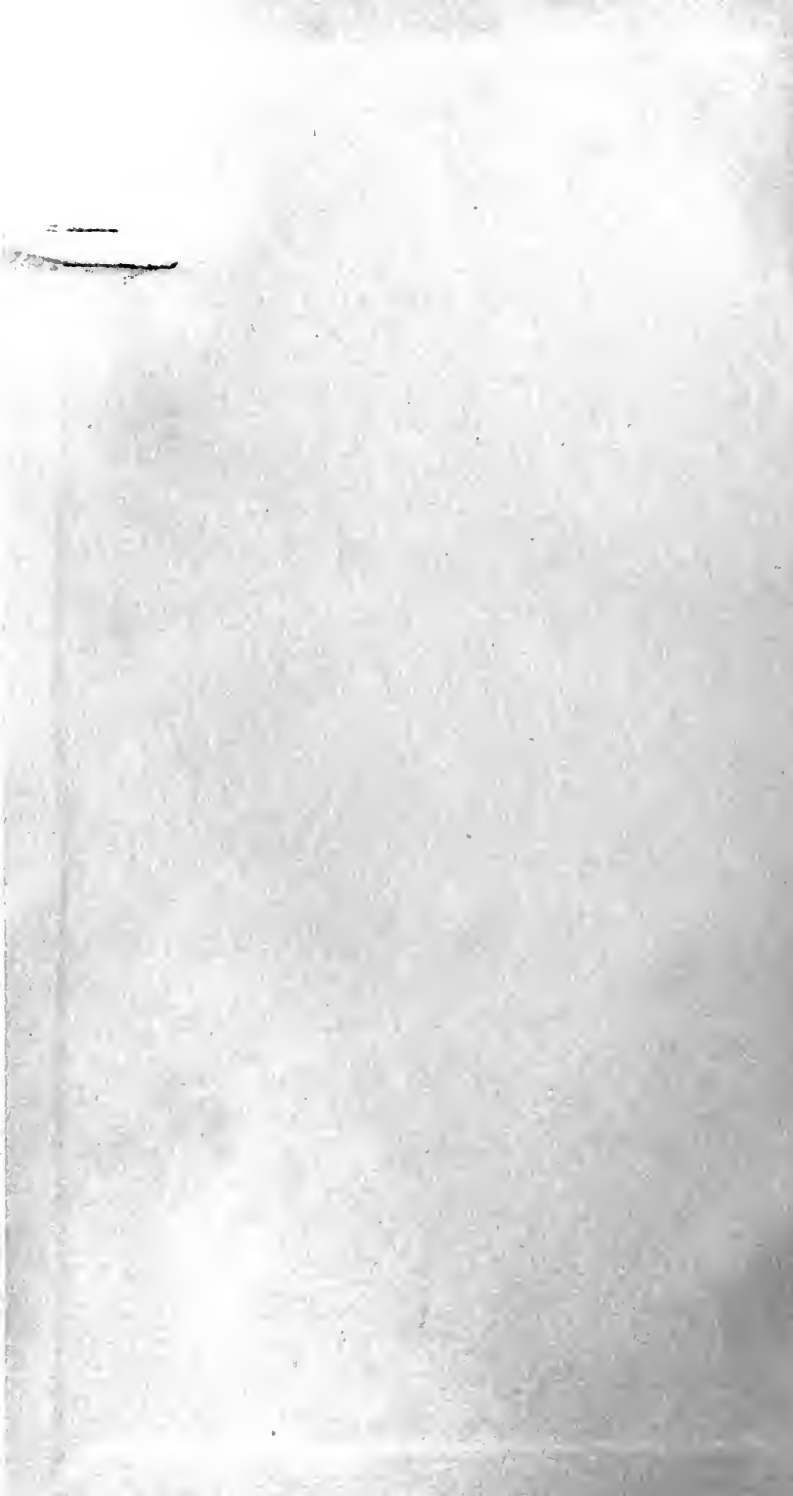


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That Admirable NEW DISCOVERY, by which the SCURVY, the *Grand English Disorder*,
I S E F F E C T U A L L Y C U R E D :

And for the successful Practice of which,

Captain COOK received the PREMIUM MEDAL from the ROYAL SOCIETY, for having preserved himself and all his Men from this dreadful Distemper, during the Space of Three Years and Eighteen Days, although he passed through all the Varieties of Climates and Seasons in his late *Voyage round the World*, performed.

By the Command of His M A J E S T Y.

A L S O

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BY LEWIS ROBINSON, M.D.

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Triumph o'er Pain, and conquer each Disease,
Enjoy your Life, and glory in your Ease.

LONDON: Printed for J. COOKE, No. 17.
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[Price ONE SHILLING.]

P R E F A C E.

AS Health is the noblest blessing of this life, the method of procuring it should be our principal enquiry. While possessed of it, we seldom pay a proper attention to its importance; when lost, we become sensible of its value, but are frequently careless concerning its recovery. The reasons are plain, while we have it we trifle with it till it flies us; when fled, we trifle with our misfortune, because we suppose the recovery to be either impossible or improbable.

For

For the benefit of mankind, we here furnish the public with some of the best and easiest methods of recovering and securing health, and of preserving life, which comprehend the greatest discoveries in the Medical Art. These will equally suit all ranks of people; the *Poor*, because the Remedies may be *cheaply* obtained; and the *Rich*, because they may be *easily* put in practice. Hence *Health* may be recovered with *Facility*, and a *Knowledge* of the powers of medicine obtained without *Difficulty*. So that our readers may at once cease to be *Patients* themselves, or, if they please, become *Practical Physicians* to others.

Every

Every Patient his own Doctor.

P A R T I.

INTERNAL DISORDERS.

S C U R V Y.

THE Scurvy being the principal disease incident to the inhabitants of Great Britain, and the source from whence many of their other disorders flow, we thought it necessary to commence this salutary Work, with an account of the nature of, and the remedies against, this fatal foe to ENGLISH CONSTITUTIONS.

S Y M P T O M S.

THE symptoms or signs of this dangerous disease are a frequent laziness and lowness of spirits, pains in various parts of the body, sometimes livid spots, often a fallow complexion, a continual itching of the blood, difficulty of breathing, swelling of the legs, bleeding

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at the nose, and spongy gums, subject to pains and bleedings. But it is to be observed, that as constitutions differ, the signs or symptoms of the disease vary; and people, according to their years, situations in life, and manner of living, are attacked by this disease, under several appearances; but some of the above symptoms always attend it according to the constitution of those afflicted; for whose benefit we shall point out the most approved and certain methods of cure hitherto discovered.

R E M E D I E S.

A Milk diet, with weak whey, greens of all kinds, fresh vegetables, fruits, acids, scurvy-grass ale, fresh beer and cyder, tar water taken twice a day, with camphire, one scruple, æthiops mineral, half an ounce, powder of gum-guaiacum, two drachms, honey, one ounce, mix and make an electuary, and take the bigness of a nutmeg every night going to rest. The patient may likewise drink the decoction of the woods. Drinking sea-water will be found extremely beneficial, as will bathing in the sea.

But for the easiest and most efficacious remedy for this dreadful disease, we may thank Capt. Cook, who in his late voyage round the world, by the command of his present MAJESTY in the ship *Resolution*, preserved himself and all his men from the Scurvy, by the use of a very simple medicine; though he passed through the temperate, the frigid and the torrid zones, was absent from England three years and eighteen days, and went through such a variety of climates, as were sufficient to make the severest attacks on the most robust constitution. But as his methods of proceeding will appear with most propriety in his own words, we shall present our readers with his Letter to Sir *John Pringle*, Bart. President of the *Royal Society*, which letter is dated *March 5, 1776*; and

and for which Captain Cook received a Premium Medal.

S I R,

“ AS many gentlemen have expressed some surprize at the uncommon good state of health which the crew of the *Resolution*, under my command, experienced during her late voyage; I take the liberty to communicate to you the methods that were taken to obtain that end. Much was owing to the extraordinary attention given by the Admiralty, in causing such articles to be put on board, as either by experience or conjecture were judged to tend most to preserve the health of seamen. I shall not trespass upon your time in mentioning all those articles, but confine myself to such as were found the most useful.

“ We had on board a large quantity of malt, of which was made sweet-wort, and given (not only to those men who had manifest symptoms of the scurvy, but to such also as were, from circumstances, judged to be most liable to that disorder) from one to two or three pints in the day to each man, or in such proportion as the surgeon thought necessary; which sometimes amounted to three quarts in the twenty four hours. This is without doubt one of the best antiscorbutic sea-medicines yet found out; and if given in time will, with proper attention to other things, I am persuaded, prevent the scurvy from making any great progress for a considerable time: but I am not altogether of opinion, that it will cure it in an advanced state at sea.

“ Sour-kROUT, of which we had also a large provision, is not only a wholesome vegetable food, but, in my judgment, highly antiscorbutic, and spoils not by keeping. A pound of it was served to each

man, when at sea, twice a week, or oftner when it was thought necessary.

“ Portable-soup, or broth, was another essential article, of which we had likewise a liberal supply. An ounce of this to each man, or such other proportion as was thought necessary, was boiled with their peas three days in the week; and when we were in places where fresh vegetables could be procured, it was boiled, with them and with wheat or oatmeal, every morning for breakfast, and also with dried peas and fresh vegetables for dinner. It enabled us to make several nourishing and wholesome messes, and was the means of making the people eat a greater quantity of greens than they would have done otherwise.

“ Further, we were provided with rob of lemons and oranges; which the surgeon found useful in several cases.

“ Amongst other articles of victualling, we were furnished with sugar in the room of oil, and with wheat instead of much oatmeal, and were certainly gainers by the exchange. Sugar, I imagine, is a very good antiscorbutic; whereas oil, such at least as is usually given to the navy, I apprehend has the contrary effect. But the introduction of the most salutary articles, either as provision or medicines, will generally prove unsuccessful, unless supported by certain rules of living.

“ On this principle, many years experience, together with some hints I had from Sir Hugh Palliser, the Captains Campbell, Wallis, and other intelligent officers, enabled me to lay down a plan whereby all was to be conducted. The crew were at three watches, except upon some extraordinary occasions. By this means they were not so much exposed to the weather as if they had been at watch and watch; and they had generally dry cloaths to shift themselves when they

they happened to get wet. Care was also taken to expose them as little as possible. Proper methods were employed to keep their persons, hammocks, bedding, cloaths, &c. constantly clean and dry. Equal pains were taken to keep the ship clean and dry between decks. Once or twice a week she was aired with fires; and when this could not be done, she was smoaked with gunpowder moistened with vinegar or water. I had also frequently a fire made in an iron pot at the bottom of the well, which greatly purified the air in the lower parts of the ship. To this and cleanliness, as well in the ship as amongst the people, too great attention cannot be paid; the least neglect occasions a putrid offensive smell below, which nothing but fires will remove; and if these be not used in time, those smells will be attended with bad consequences. Proper care was taken of the ship's coppers, so that they were kept constantly clean. The fat, which boiled out of the salt beef and pork, I never suffered to be given to the people, as is customary; being of opinion that it promotes the scurvy. I never failed to take in water wherever it was to be procured, even when we did not seem to want it; because I look upon fresh water from the shore to be much more wholesome than that which has been kept for some time on board. Of this essential article we were never at an allowance, but had always abundance for every necessary purpose. I am convinced that with plenty of fresh water, and a close attention to cleanliness, a ship's company will seldom be much afflicted with the scurvy, though they should not be provided with any of the antiscorbutics before-mentioned. We came to few places where either the art of man or nature did not afford some sort of refreshment or other, either of the animal or vegetable kind. It was my first care to procure what could be met with of either, by every means in my power,

power, and to oblige our people to make use thereof; both by my example and authority; but the benefits arising from such refreshments soon became so obvious, that I had little occasion to employ either the one or the other.

“ These, Sir, were the methods, under the care of Providence, by which the *Resolution* performed a voyage of three years and eighteen days, through all the climates from 52 degrees north to 71 degrees south, with the loss of one man only by disease, and who died of a complicated and lingering illness, without any mixture of scurvy. Two others were unfortunately drowned, and one killed by a fall; so that of the whole number with which I set out from England, I lost only four.

“ I have the honour to be, Sir, &c.”

Extract of a Letter from Captain Cook to Sir John Pringle, Bart. dated Plymouth Sound, July 7, 1776.

“ I entirely agree with you, that the dearth of the rob of lemons and oranges will hinder them from being furnished in large quantities, but I do not think this so necessary; for though they may assist other things, I have no great opinion of them alone. Nor have I an higher opinion of vinegar: my people had it very sparingly during the late voyage; and towards the latter part, none at all; and yet we experienced no ill effects from the want of it. The custom of washing the inside of the ship with vinegar I seldom observed, thinking, that fire and smoak answered the purpose much better.”

To the above we shall subjoin the following remarks on Captain Cook's judicious procedure; with some other interesting particulars; being a summary of the discovery of the great antiscorbutic virtues of sweet-wort by Dr. Macbride, &c.

“ CAPTAIN Cook begins his list of stores with
malt:

malt: “Of this,” he says, “was made sweet-wort, “ and given not only to those men who had manifest “ symptoms of the scurvy, but to such also as were “ judged to be the most liable to it.” Dr. Macbride, who first suggested this preparation, was led, as he says, to the discovery by some experiments that had been laid before the Royal Society; by which it appeared, that the air produced by alimentary fermentation was endowed with a power of correcting putrefaction. The fact he confirmed by numerous trials, and finding this fluid to be *fixed air*, he justly concluded, that whatever substance proper for food abounded with it, and which could be conveniently carried to sea, would make one of the best provisions against the scurvy; which he then considered as a putrid disease, and as such to be prevented or cured by that powerful kind of antiseptic. Beer, for instance, hath always been esteemed one of the best antiscorbutics; but as that derived all its *fixed air* from the malt of which it is made, he inferred, that malt itself was preferable in long voyages, as it took up less room than the brewed liquor, and would keep longer sound. Experience hath since verified this ingenious theory, and the malt hath now gained so much credit in the navy, that there only wanted so long, so healthful, and so celebrated a voyage as this, to rank it among the most indispensable articles of provision. For though Captain Cook remarks, that “ a proper attention to other “ things must be joined, and that he is not altogether “ of opinion, that the wort will be able to cure the “ scurvy in an advanced state at sea; yet he is persuaded, that it is sufficient to prevent that distemper from making any great progress, for a considerable time;” and therefore he doth not hesitate to pronounce it, “ one of the best antiscorbutic “ medicines yet found out.”

This salutary *gas*, or *fixed air*, is contained more
or

or less in all fermentable liquors, and begins to oppose putrefaction as soon as the working or intestine motion commences.

In wine it abounds, and perhaps no vegetable substance is more replete with it than the fruit of the vine. If we join the grateful taste of wine, we must rank it first in the list of antiscorbutic liquors. Cyder is likewise good, with other vinous productions from fruit, as also the various kinds of beer: It hath been a constant observation, that in long cruizes or distant voyages, the scurvy is never seen whilst the small-beer holds out at a full allowance; but that when it is all expended, the disorder soon appears: It were therefore to be wished, that this most wholesome beverage could be renewed at sea; but our ships afford not sufficient convenience. The Russians however make a shift to prepare at sea, as well as at land, a liquor of a middle quality between wort and small-beer, in the following manner. They take ground malt and rye meal in a certain proportion, which they knead into small loaves, and bake in the oven. These they occasionally infuse in a proper quantity of warm water, which begins so soon to ferment, that in the space of twenty-four hours their brewage is compleated, in the production of a small, brisk, and acidulous liquor, which they call *quas*, palatable to themselves, and not disagreeable to the taste of strangers. The late Dr. Mounsey, member of the Royal Society, who had lived long in Russia, and had been *Archiater* under two successive sovereigns, says, that the *quas* was the common and wholesome drink both of the fleets and armies of that empire, and that it was particularly good against the scurvy. He added, that happening to be at Moscow when he perused the "Observations on the Jail-Fever," published here, he had been induced to compare what he read in that treatise with what he should

should see in the several prisons of that large city : but to his surprize, after visiting them all, and finding them full of malefactors, for the late empress then suffered none of those who were convicted of capital crimes to be put to death, yet he could discover no fever among them, nor learn that any acute distemper peculiar to jails had ever been known there. He observed that some of those places of confinement had a yard, into which the prisoners were allowed to come for the air ; but that there were others without this advantage, yet not sickly : so that he could assign no other reason for the healthful condition of those men than the kind of diet they used ; which was the same with that of the common people of the country, who not being able to purchase flesh-meat live mostly on rye-bread, the most acescent of any bread) and drink *quas*. He concluded with saying, that upon his return to Petersburg, he had made the same enquiry there, and with the same result.

Thus far my informer : from whose account it would appear, that the rye-meal assisted both in quickening the fermentation, and adding more fixed air ; since the malt alone could not so readily produce so acidulous and brisk a liquor. And there is little doubt but that whenever the other grains can be brought to a proper degree of fermentation, they will more or less in the same way become useful. That oats will, I am satisfied, from what I have been told by one of the intelligent friends of Captain Cook. This gentleman being on a cruize in a large ship, in the beginning of the late war, and the scurvy breaking out among his crew, he bethought himself of a kind of food, he had seen used in some parts of the country, as the most proper on this occasion. Some oatmeal is put into a wooden vessel, hot water is poured upon it, and the infusion continues until

the liquor begins to taste sourish; that is, till a fermentation comes on, which in a place moderately warm may be in the space of two days. The water is then poured off from the grounds, and boiled down to the consistence of a jelly. This he ordered to be made, and dealt out in messes, being first sweetened with sugar, and seasoned with some prize-wine he had taken, which, though turned sour, yet improved the taste, and made this aliment no less palatable than medicinal.

G O U T.

S Y M P T O M S.

THE urine of the person afflicted is high coloured, and has a sandy sediment of a reddish cast; the part affected looks red and is swelled. The pain is exceedingly acute, as if the bone was broken, and is succeeded by a slight fever, and a chillness or shivering, which seizes the great toe, ancle, heel, calf of the leg, &c.

R E M E D Y.

BEFORE the afflicted go to bed at night, they should take a tea spoonful of volatile tincture of guaiacum in a glass of water: keep themselves warm, and drink sack whey. Exercise is very requisite for those afflicted with this disorder.

As the duke of Portland's Gout Powder is remarkably efficacious in the cure of this disorder, we shall here transcribe the receipt for making it.

TAKE of round birthwort root and gentian root, of the tops and leaves of germander, ground pine, and centaury: take of all these, well dried, powdered and sifted as fine as possible, an equal quantity; mix them well together, and take one drachm of this mixed powder every morning fasting in a cup of wine and water, broth, tea, or any other vehicle you like best;
keep

keep fasting an hour and an half after it. Continue this medicine for three months without interruption then diminish the dose to three quarters of a drachm for three months longer, then to half a drachm for six months more, taking it regularly every morning if possible. After the first year, it will be sufficient to take half a drachm every other day. As this medicine operates insensibly, it will take perhaps two years before you receive any great benefit; so you must not be discouraged, though you do not perceive at first any great amendment; it works slow but sure: it doth not confine the patient to any particular diet, if he lives soberly, and abstains from those meats and liquors that have always been accounted pernicious in the gout; as champaign, drams, high fauces, &c.

R H E U M A T I S M.

S Y M P T O M S.

FEVERISH and costive body, loss of appetite, coldness of the extreme parts, heaviness of the joints, chillness, shivering, and racking pains in the limbs.

R E M E D I E S.

BE covered warm when you go to bed, and take a drachm of powder of gum-guaiacum. The duke of Portland's Gout Powder is likewise used in this disorder; but it is to be observed, that in the rheumatism, which is only accidental and not habitual, a few of the drachm doses may do; but if habitual, or has been of long duration, then you may take it as for the gout. The remedy requires patience, as it operates but slow in both distempers.

P L E U R I S Y.

S Y M P T O M S.

HEAT, thirst, a troublesome cough, and a violent pain of the side. If the patient is bled, the blood has a resemblance of tallow when melted.

R E M E D I E S.

FREQUENT bleedings, a blister on the side, and half a pint of the following infusion taken twice a day: a quart of boiling penny royal water poured on six ounces of fresh horse dung, strain it when cold, and sweeten it with a quarter of an ounce of Venice treacle.

F E V E R S.

S Y M P T O M S.

THERE are two principal sources of fevers, one comprehends the causes which render the blood and other fluids of the body too thick; the other includes those which make them too thin. Let us now examine how one sort may be distinguished from the other.

It should be observed, that in all fevers of every kind, there is a morbid or malignant quality introduced and subsisting in the blood as the productive cause; and the proper means for curing them are such methods and medicines as by experience have been found effectual for removing their morbid quality, and recovering the sick in the shortest time.

In some persons, when there is too much blood, such bleeding may be advised as will draw off the excess, except in pestilential distempers, in which blood-letting has proved almost always mortal, even in the bodies fullest of blood; this evacuation must
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be moderately used in pleurifies, as the extremity of pain and difficulty of breathing shall require it.

That the common people (who generally know when persons have fevers) may have a little more knowledge of these acute diseases, and how to distinguish one kind of them from the other; the person who is to direct for the sick, should carefully enquire into the state of his body; he should examine his pulse. Let him feel the pulse of two or three that are in health, and his own pulse; and then compare them with the pulse of the patient, and thereby he will come nearly to know how much it differs from the healthful standard, as to quickness or slowness, and as to its strength and weakness, and be able to deduce some conclusions which may guide his conduct; then let him learn the degree of febrile heat; and one way to do this may be by feeling the side of the neck below the ears (through which the large blood vessels pass to and from the brain) and thus the degree of the heat of the blood may be known; and the other symptoms of the patient should be particularly enquired into.

If the heat of the body be excessive, the pulse quick and strong, the flesh very dry, the pores of the skin very close, and the thirst very great, it may be concluded that the cause which produced that fever has rendered the blood too thick.

If the pulse is too quick, and not strong, and the heat of the body not great; if the tongue is very black or dry, and the thirst is great, or if the patient voids blood by urine, or spitting, or at his nose, or by stool; or if he has flat spots on his skin, black or redish in colour, or if he has a great looseness, with watery or thin stools; or if he has profuse sweats, with a sensible sinking of his spirits, and decrease of strength, it may be inferred, that the fever is of a putrid kind.

R E M E D I E S.

THE following general rules should be observed; to drink as plentifully as possible some diluting liquor whenever thirsty, such as barley-water, mint and balm and sage tea, thin water-gruel, or beef tea made as follows:

Take a pound of lean beef, cut it small, pour upon it two quarts of water, boil it for the space of five minutes, then keep for use.

To use such nutritious food, as most freely may be taken, because it abates the acrimony of the blood, repairs the waste of the body, and is one of the best cordials; small whey made with Canary or Mountain wine may be frequently used.

It may be necessary, before we proceed farther, to premise that in liquid, by four table spoonfulls, is meant half a gill, or two ounces; two spoonfulls one ounce, one spoonfull half an ounce, or four drachms.

If seized with any feverish complaint, take the following mixture.

Salt of wormwood, two drachms, lemon juice, or any acid, a sufficient quantity to make a neutral medicine, sugar about two drachms, common water about half a pint, and about two ounces of nutmeg water, or any spirit; mix together, and take two spoonfulls every three hours.

At night take a little sweat going to rest, and the next morning continue the mixture. Or if inconvenient to make up the above medicine, or too poor to get it, we recommend Salt Petre as an efficacious as well as cheap remedy.

We shall mention one instance of its utility. A poor woman asked advice for her husband (a man about forty years of age) who had a fever, with a violent pain in his side, and was light-headed at times.

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We advised her to get an ounce of salt-petre, and powder it; then to divide it into four equal parts, and each of them into four others, for so many doses, each of which will contain about half a drachm, directing that she should give one of them, dissolved in a coffee dish of sage tea, sweetened with sugar to his palate every three or four hours; and when he had taken this salt, she came and said, that his fever was gone; but that his cough remained. We then advised her to give him about twenty drops of balsam capivi, with powder sugar, night and morning; and he happily recovered.

But if troubled with a cough, add, of sperma-ceti in powder two drachms, dissolved with the yolk of an egg, to be taken in the same manner.

Or, if that cannot be had, the following powder.

Take sperma-ceti in powder, half an ounce; sugar and salt-petre each two drachms; mixt together, and take as much as will lay on a shilling every three or four hours in any liquid.

If bound, take the following opening mixture.

Take two drachms of fenna leaves, boil in ten ounces of common water to eight ounces; strain off, and add manna half an ounce, tincture of fenna one ounce; mix, and take two table spoonfulls every three hours, till it operates.

This medicine is easily prepared, and very handy on many occasions, especially when the body calls for a remedy of this nature; it is cooling as well as laxative; washes its passage through the bowels, without any griping or disorder, and stands in need at the same time of no over strict regimen.

Thus far fevers in general; proceed we therefore to those more particular.

Of an Acute Inflammatory Fever.

THE young, robust plethoric habit, will ever be most liable to inflammations; whilst, on the contrary,
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in the weakly and infirm, the circulation cannot readily be worked up to such a pitch as is requisite to constitute a disease of an inflammatory kind; in both, cold or obstructed perspiration is almost the only occasional cause. This fever may be easily known from the constitution of the sick person; a quick, full and tense pulse, hard beyond its natural state; florid countenance, with great heat and thirst, acute pains in the head, back and loins, &c.

To the cure of an inflammatory fever therefore it is necessary, first, to take away about six or eight ounces of blood, then give about fifteen grains of Ipecacuanha in a cup of any liquid, and work it off with camomile flower tea, having nothing after it that night, but a little mulled wine to settle the stomach.

Tartar emetic two grains, diaphoretic antimony, ten grains, barley water, eight ounces; mix and take two spoonfulls every four hours; and every now and then about as much salt-petre as will lay on a shilling dissolved in the drink.

If all this should not open the body, it will be necessary to add an emollient clyster.

If at the end of the disease the pulse should flag, discontinue the medicines, and use cordials.

If an intermission should happen, with gentle sweats, and turbid urine; the bark in small doses or rather a decoction of it, may be thrown in.

Of the Nervous Fever.

THIS low nervous fever is directly opposite to the acute inflammatory, and therefore must be differently treated.

It mostly happens from profuse evacuations, and to those of relaxed solids, and dissolved watery fluids; the pulse, though quick, is here weak and low, the heat of body but little beyond the natural, and the
symptoms

symptoms in general of the spasmodic kind, and independent of inflammation.

In the one it becomes necessary to lower the impetus of the circulation, by evacuations and coolers; in the other, the warm cordial, the stimulating medicines are by all means advisable to excite the *vita*, and promote such a degree of fever as may suffice for its expulsion.

Evacuations of blood, and by stool, can then be of no service in the cure of a low fever, but a great detriment. A gentle vomit in the beginning, and a breathing sweat throughout its continuance will be useful.

A warm, light, nourishing diet, and plenty of generous wine will be expedient, with blisters and sinapisms, or mustard plaisters and other drawers of the feet, for the relief of the symptoms.

First then give the *ipécacuanha* vomit, with the mulled wine as before described; and going to bed, half a drachm of mithridate. The next day the following mixture.

Take Venice treacle, two drachms, syrup of saffron, half an ounce, simple mint water, eight ounces, strong cinnamon water, two ounces, volatile tincture of valerian; two drachms, mix, and take two spoonfuls every three or four hours.

To these may be added as occasion requires, a little opiate camphire, contrayerva, valerian, cochineal, warm aromatics, and some volatile salts; and when better, the gum pills; but if towards the latter end of the disease, when gentle sweats break out, and the urine becomes turbid or thick, the bark will be attended with great advantage, though there should appear no intermission.

INTERMITTING FEVER, OR AGUE.

SYMPTOMS.

ACCORDING to the air, constitution and strength of the patient, intermittents frequently vary, some will have a tendency to the inflammatory, or degenerate into an acute continual fever, especially if too hot a regimen has been used; which if it should have been the case, gentle cooling purges will reduce it, and then give the bark with nitre joined with it. On the contrary, intermittents will urge on the nervous fever; in which case join the cordial aromatics, such as snake root, contrayerva, myrrh, camphire, and the like, with the bark.

REMEDIES.

TO cure an intermission, the following is advisable.—Best bark one ounce, finely bruised; snake root, two drachms, finely bruised; boil in common water from a pint and a half to one pint, strain it off, and take four spoonfuls every three or four hours. If it should purge, add to each dose five or six drops of liquid laudanum; if it should bind, about five or six grains of powdered rhubarb; if want of appetite, about five or six drops of elixir of vitriol.

A variety of different medicines have been found to succeed, but the preference has ever been given to the bark; twelve drachms of which generally puts by the fit, though it is necessary to continue a few doses more to prevent a return.

One or two grains of Roman vitriol given, during the intermission, two, three, or four times in the twenty-four hours; or about a drachm of allum, with thirty grains of nutmeg, or snake-root, in half a pint of warm ale or barley water has succeeded well.

Inter-

Intermitting Fevers, those especially whose fits return every other day, have been often cured with a few doses of cochineal, by taking about half a drachm of it in powder, some time before the accession of each fit; and others have been recovered, by taking five, six, or seven grains of the Virginian snake root, three times on the days of intermission, at about four or five hours distance; and I have with success advised some of the poor to drink a quarter of a pint of tea, made with the root of burdock, every third or fourth hour, during the intermissions, sweetened with sugar or not sweetened, as the patient chuses.

These sort of intermittents allow a good opportunity for taking the Peruvian bark, and that the poor, those great objects of our compassion and charity, may have the benefit of that excellent remedy, at the least expence, advise the following method, viz.

To buy an ounce of the best bark in powder, then divide it into eight or twelve equal parts, and take a dose of it every third hour, during the intermissions, beginning as soon as they are quite free from a fit, in the following manner, viz.

Mix a dose of the bark, with a tea cup of hot water, with which it will mix easily; and when it is cool enough, then let the patient drink it, and take after it a glass of punch, made in the common way, and take his meals at his usual times. Suppose the time for taking the bark happens at the time of dining, let him first take the bark, and then eat his dinner. I have done so myself.

We advice the patient to take the bark in the night, as well as in the day, which I have done myself several times, having a person to sit up and wake me, when the time for taking the bark comes.

If the patient can take a drachm of the bark for a dose, without finding his stomach loaded, let that quantity be the dose; and when he has taken one

ounce, though he misses the fit, yet let the bark be prepared, and the doses taken at four hours distance.

HECTIC FEVERS *attended with Coughs or Consumptions.*

S Y M P T O M S.

HECTIC Fevers with coughs, are commonly called Consumptions, on account of the great waste, or decrease of the bodies afflicted with them.

The symptoms, which are obvious, and necessary consequences of an ulcerated state of the lungs, are a cough, a copious spitting of a purulent-like matter, which is thrown up night and morning, and if tried, sinks in water.

Oppression of the breast, bad appetite, thirst great, hectic fever, colliquative sweats, which succeed night and morning alternately, a lowness, and great discharge of urine, the pulse becomes quick and sharp, the body pines, and is emaciated, and its several functions totally impaired and decayed.

R E M E D I E S.

THE air where the patient lies ought to be free and pure, the constitution must be kept in action, and take as much exercise every day as it can bear.

Horse-riding, giving the body motion with little fatigue, if convenient, is preferable to any carriage, which should be before dinner, else it proves hurtful. Great care must be taken to prevent catching cold by damp things or otherwise.

A southern voyage by sea frequently cures, when all things else fail, provided the provisions are fresh; and as milk cannot there be easily obtained, fruits, broths and balsamics must supply the place.

A proper regimen, with the patient's own endeavours,

yours, act mostly towards the cure; a mind kept easy, with varying objects to divert the attention; yet it may be necessary to subjoin some serviceable medicines.

First, I would recommend for diet, light, but restorative, and diluting drink. Milk, asses milk (if obtainable) water-gruel made of meal, or fine white flour, with a little butter or sugar, or cyder whey, or barley water, or ground-ivy tea sweetened with sugar or honey, acidulated with the juice of lemon, or an apple boiled in a pint of water, with one large spoonful of brandy, and sweetened as before directed, as necessary to promote the spitting up the phlegm.

Secondly, to remove the fever, give the following medicine :

Salt petre, two drachms ; cochineal, half a drachm ; pure water, half a pint ; syrup of balsam, or sugar, or honey, sufficient to pallate ; brandy, or rather rum, two ounces ; mix these and take two spoonfuls every third or fourth hour.

If there should be a flux, then the following :

Tincture of roses, one pint ; liquid laudanum, twenty grains ; drink a cupful often.

If restless at night, take storax pill four grains. When there is great difficulty of breathing, the ammoniac medicine, with the oxymel of squills, give the most relief.

U L C E R A T E D L U N G S.

THE SYMPTOMS are described in the last article.

R E M E D I E S.

COMPOUND powder of gum-tragacanth, one scruple ; salt-petre, ten grains ; make a powder to be taken in any soft liquid, four times a day.

If

If the chest or stomach should be sore, emulsions of sperma-ceti, or oil of almonds will be useful, as well as twenty drops of the balsam capivi, night and morning, and continued for some weeks, even after well; and to strengthen all the muscular fibres and vessels of the body, close with the preparation of the bark, and elixir of vitriol.

PESTILENTIAL DISORDERS.

SYMPTOMS.

THESE disorders which go under the different names of morbid, malignant, putrid, pestilential, petechial, hospital, and goal fevers, differ only in a degree from each other. They arise from many causes, such as foul air, or putrid animal and vegetable effluvia, or from confined places, not properly ventilated or kept clean, or frequently communicated by contagion.

The symptoms in general are lassitude and weakness, or loss of strength, an oppression or pain in the stomach, pulse low or weak, bitter taste in the mouth, drowsiness, foetid breath, a dejected mind, frequently sighing, wanting to vomit, great pain in the head, back and loins, tongue black, chapped, though at first white, and small spots about the skin, resembling the measles, but of a purple or livid colour. Eyes heavy, yellowish and inflamed, and frequently profuse sweating.

REMEDIES.

BLEEDING here is to be avoided as most dangerous: and the first thing, clear the stomach by Ipecacuanha wine, about one ounce, worked off with camomile flower tea, and mulled wine at night.

Then begin and take the recipe prescribed for intermitting fevers, and drink weak mountain whey, with

with tincture of roses plentifully acidulated, with the elixir of vitriol. Likewise the following bolus, three times a day, in some tormentile root tea, and sweetened with the finest sugar.

Powder of valerian, ten grains; powder of snake root, ten grains, cochineal, four grains, gum camphire, five grains; syrup of saffron, a sufficient quantity to bind it.

If bound, the bowels should be gently opened by powdered rhubarb, in small doses; and if occasion, emolient clysters; if a diarrhea, or purging, cordial restringents, and gentle opiates occasionally; omit all volatiles as prejudicial.

If any morbid quality of the blood discovers itself by any symptom on the skin, it is an argument against every evacuating remedy, which makes a revulsion from the surface of the body; therefore never use them for the cure of any cutaneous disease.

ST. ANTHONY'S FIRE.

SYMPTOMS.

CHILLNESS, and shivering, great thirst, restlessness, the face suddenly swelled, becomes painful, and appears red and pimply, and the eyes are closed with the swelling.

REMEDIES.

THE patient must lose eight or ten ounces of blood, which must be repeated if the symptoms continue strong. Apply to the part a pultice of white bread and milk, and a little hog's lard in it; let the pultice be changed twice in a day; but flannels wrung out of a strong decoction of elder flowers applied warm afford the speediest ease and relief; and every other morning take the following purge, till the disorder is cured; viz.

Glauber's

Glauber's salt one ounce; manna half an ounce: mix and dissolve it in warm water for one dose.

The diet in this disease must be very low, chiefly water-gruel, or at most weak broth; all strong liquors and flesh meat must be avoided as poison.

A P O P L E X Y.

S Y M P T O M S.

SHORT breathings, imaginary noises in the ears; drowiness, loss of memory, tremblings, staggerings; a giddiness in the head, and dimness of sight.

The disease at its height is a total deprivation of all sense and motion, respiration excepted, and even that is performed with great difficulty. It greatly injures the faculty both of the mind and body, and is seldom perfectly curable.

R E M E D I E S.

CUPPING in the nape and sides of the neck is always useful, provided the scarifications are deep enough to give a free passage to the blood; stimulating clysters and warm purges are also of service, as is the following electuary. Take half an ounce of powdered heath valerian, and one ounce and an half of conserve of orange peel; and mix them together; the dose is the quantity of a nutmeg every four hours, dissolved in a cup-full of rosemary tea. Apply a strong blister to the back and the legs. The diet must be very sparing.

A S T H M A.

S Y M P T O M S.

A laborious breathing, or obstruction of the lungs attended with great anxiety, and a straitness about the breast.

R E M E D I E S.

R E M E D I E S.

BLEEDING, gentle vomits, a large blister applied to the back or legs, slender diet and malt liquors to be particularly avoided. Likewise frequently take three large spoonfuls of the following mixture; two drachms of gum ammoniacum in half a pint of pennyroyal water, intermixed with an ounce of oxymel of squills.

B L O O D Y F L U X.

S Y M P T O M S.

SHIVERING, coldness, gripings, quick pulse, intense thirst, greasy stools frequently mixed with blood and filaments which appear like melted suet.

R E M E D I E S.

FIRST lose blood, then take the following vomit: Half a drachm of powder of ipecacuanha worked off with camomile tea: daily repeat this vomit three or four times. Malt and spirituous liquors must be carefully avoided, and between the vomitings the patient should every hour take a large spoonful warm of a drink made thus. Dissolve half an ounce of gum arabic, and half an ounce of gum tragacanth in a pint of barley water, over a gentle fire. Clysters made of fat mutton broth are of great service.

S T O N E A N D G R A V E L.

S Y M P T O M S.

A suppression, or stoppage of urine, may proceed from various causes, such as the kidneys, or the neck of the bladder being inflamed, small stones lodging in the urinary passages, spasms or contraction of the neck of the bladder, &c.

In all obstructions, if the patient's strength will admit of it, draw off about eight ounces of blood, give some cooling, gentle, opening medicines, with a little sweet oil, and foment the part with a decoction of mallows, or camomile flowers; let there be drank often some diluting liquor, with about forty nitre drops in it, and every six hours, about one drachm of Castile soap, dissolved in any liquid, especially if small gravel comes away with the urine, or it should be bloody; for when small stones are lodged in the kidneys, which come away with the urine, it is called gravel; but when they lodge some time in the bladder, they collect together, form a body, and accumulate fresh matter, begin to be too large to pass off with the urine, and then is called a stone.

When afflicted with the stone, avoid all aliments of a windy or heating nature, all salt meats, sour fruits, acids of all kinds, use every thing that promotes the secretion of urine, and keeps the belly open, artichocks, asparagus, lettuces, &c. are proper; and to drink milk and water, barley water, decoctions of marshmallows, parsley, liquorice, linseed, or gin and warm water mixt, not too strong; use gentle exercise, and take soap lees, beginning with thirty or forty drops, in a cup of lime water, every night and morning, and increase the dose regularly to sixty drops, as the stomach will bear. Likewise nitre drops in marshmallow tea, with gum arabic; or take broom seed, finely ground, as much in quantity as will lay on a shilling, in a gill of the best white port, morning and evening.

R E M E D I E S.

T A K E two scruples of calcined egg shells three times a day, in a glass of any convenient liquor, drinking after each dose, a third part of the following decoction.

Take

Take two ounces of Castile soap, dissolve it in a quart of soft water, and sweeten it according to your taste, with honey, or loaf sugar. If this decoction is made in a copper vessel, care must be taken that it is well tinned.

The taking of these medicines must be continued for some time after the complaint is removed, lest any part of the stone should remain, which being rough and unequal, might occasion exquisite pain.

It is common, after a few days use of these medicines, to have an increase of pain in making water, at which time a soft diet, emollient drinks and rest are proper. For common drink milk and water, or a decoction of marshmallow roots, parsley and liquorice may be used; but if the person has been used to strong liquors, small punch, made without acid, may be drank sparingly. Artichokes, asparagus, spinage, lettuces, succory, parsley, turnips, potatoes, raddishes, peas, &c. may be safely used; but onions, leeks and cellery, are to be preferred to all other vegetables.

The patient ought to drink no more of any liquor than is sufficient to quench his thirst, and he should hold his water as long as he can without great uneasiness, that it may have the longer time to act in the stone.

If these medicines occasion costiveness, it will be necessary now and then, to take a dose of Glauber's salt and manna.

D R O P S Y.

S Y M P T O M S.

THE dropsey is caused by many irregularities, from drinking strong liquors, from want of exercise, from excessive evacuations, from too much loss of
E 2
blood,

blood, from fluxes, &c. It is so called from a preternatural swelling of the whole body, occasioned by a collection of water therein.

R E M E D I E S.

THE Patient must take a vomit, working it off with a little camomile flower tea, and once a week after, take jalop in powder, and cream of tartar, each half a drachm in a cup of tea, working it off with a little broth. In the intermediate days, take salt of nitre, twenty grains, powder of squills ten grains, mix together, take at night going to bed, and the first thing in the morning, in a small glass of brandy, and let the belly be anointed with a little warm oil twice every day, wearing a flannel next the skin, abstaining as much as possible from drink, especially weak and watry liquors, and quench the thirst with acids, such as juice of lemons, oranges, &c. Let the food be dry, and of a healing quality; roasted bread, wild animals roasted with garlick, mustard, onions, cresses, horse-radish, and such like; tea biscuit dipt in wine, or a little brandy, now and then, will not only quench the thirst, but prove very nourishing; all diuretic medicines infused into Rhenish wine, are very serviceable. Or take the large leaves that grow upon the stem of the artich oak, wipe (not wash) them; bruise them in a mortar, and strain out the juice through a linen cloth, forcing it out; then put a pint of the juice into a quart bottle, with a pint of Madeira wine, or Mountain, if you cannot get good Madeira. Take three spoonfuls every morning fasting, and three spoonfuls likewise at going to bed; the dose may be increased to four or five, if the case requires, and the stomach will bear it. Mind to shake the bottle well, when you take it,

C O N V U L S I O N S.

S Y M P T O M S.

CONVULSIONS in children are thus to be distinguished. The face turns blackish, the eyes are distorted, and the balls seem immoveable, the mouth is drawn awry, and the fist is clenched. It is to be observed that a drowsiness usually intervenes between the fits.

R E M E D I E S.

A BLISTER applied to the nape of the neck is sometimes serviceable. Or give a few hartshorn drops in a tea-spoonful of water frequently, or give three or four drops of the tincture of wood foot in the same manner.

D I A B E T E S.

S Y M P T O M S.

A great discharge of urine, of the smell, colour and taste of honey, a decay of the whole frame, and an intense thirst.

R E M E D I E S.

INFUSE for three days in one gallon of lime water, three ounces of liquorice root, two ditto of the shavings of saffrafras, and one of guaiacum. The dose is half a pint, three times a day. Lime water is made by pouring twelve pints of boiling water on one pound of unslacked lime, which is fit for use as soon as cold.

Or make allum whey, by boiling four pints of milk over a slow fire, with three drachms of allum, till it is turned into whey. When as much as will fill a four ounce phial may be taken three times a day.

E A R.

E A R - A C H.

SYMPTOMS.

A pain in the ear, arising from a cold, or a disorder of the nerves of the head.

REMEDIES.

THE smoak of tobacco blown into the ear, or a roasted onion or salt put into the ear, will take away the pain, but the head must be kept warm.

D R Y B E L L Y A C H.

SYMPTOMS.

THE Symptoms of the dry belly ach, or in other words, the nervous cholic, are, costiveness, violent pains in the bowels, coldness of the hands and feet, faintings, a kind of paralytic disorder, great anxiety of mind and tremblings.

REMEDIES.

THE warm bath is an admirable remedy, as is balsam of Peru, given inwardly from twenty to forty drops in a spoonful of powdered loaf sugar, three or four times a day; besides which you may give the following clyster. Boil in a pint of water an ounce of dried mallow leaves, half an ounce of camomile flowers, and half an ounce of sweet fennel seeds. Half a pint of this decoction, with half an ounce of Epsom salts, and two spoonfuls of sweet oil must be used for a clyster, and repeated as often as necessary.

Y E L L O W J A U N D I C E.

SYMPTOMS.

A yellowness of the whole body, and more particularly about the eyes, urine of a saffron colour, stools almost white, bitterness of the tongue, vomiting of galls, heaviness and lassitude of the limbs,

R E M E D I E S.

TAKE the white of an egg, and two glasses of spring water; beat them well together, and drink the quantity off at a draught.

It cools the lungs, which in this distemper are always inflamed; expels the asthmatic disorder, which also always, in some degree, afflicts the party diseased; it speedily procures perspiration, invigorates the animal spirits, causes digestion, and creates an appetite.

By these means the late lord Blakeney cured great numbers in Ireland, Minorca, and in this kingdom; and said that he never knew it to fail.

I N D I G E S T I O N.

S Y M P T O M S.

FREQUENT belchings, heart-burn, and an oppression or weight at the stomach.

R E M E D I E S.

PYRMONT and Spa waters. Or from ten to twenty drops of acid elixir of vitriol in a glass of water, two or three times a day, or a large spoonful of tincture of hiera pica, every day an hour before dinner.

I N F L A M M A T I O N O F T H E B O W E L S.

S Y M P T O M S.

A feverish complaint, a vomiting, a great costiveness, and a burning pain in the belly.

R E M E D I E S.

SPARE diets and weak broths should be used. Juice of lemons taken inwardly affords surprizing relief; or let the patient lose ten ounces of blood, and have the bleeding repeated according to the urgency of
the

the complaint. Then, till the patient has had two or three stools, give twice every day the following clyster.

Take of dried mallow-leaves an ounce; chamomile flowers, and fennel seeds, of each half an ounce; boil them in a sufficient quantity of water to strain off about half a pint; then add two ounces of sweet oil, and it is fit for use.

To ease the pain, and stop the vomiting, give ten drops of liquid laudanum, in a little broth, every six hours.

M E A S L E S.

S Y M P T O M S.

THIRST, drowfiness, slight cough, chillness; shivering, accompanied by a fever, great sickness, and an effusion of tears. The little red spots, which do not rise above the surface of the skin, appear the fourth day.

R E M E D I E S.

THE diet and management to be the same as in the small pox; then bleeding and frequent purging; and let the patient drink plentifully of the following decoction.—Take pearl barley, raisins and figs, of each two ounces, stick liquorice bruised, half an ounce: boil them in four quarts of water, till the water is reduced to two quarts; strain it for use, and tincture it with a quarter of an ounce of salt prunella.

Every

Every Patient his own Doctor.

P A R T II.

EXTERNAL DISORDERS.

P I L E S.

S Y M P T O M S.

THE piles are of a two-fold nature, the bleeding piles and the blind piles; the former, when there is any discharge, the latter, when there is not.

Persons of a bulky size, who lead an inactive life, and live high, are most subject to this disease, though it is sometimes hereditary, and then it attacks more early in life than when it is accidental. They may be occasioned by an excess of blood, by strong aloetic purges, high seasoned foods, by drinking great quantities of wines, the neglect of any customary evacuations, much riding, great costiveness, or any thing that occasions hard or difficult stools. Pregnant women are sometimes afflicted with them.

F

R E M E-

R E M E D I E S.

IF only little swellings within and without the fundament, touch them with a little oil of amber. Or, take lime water, four ounces, liquid laudanum, half an ounce, mix together, and make a liniment to bathe the parts with it very often.

If they are bleeding piles, care must be taken not to stop them too soon, especially if they are periodical, and return frequently, as they prove salutary; but if they continue in such quantity as to waste the patient's strength, hurt his digestion, or impair any functions, then a proper regimen and astringent medicines must check the discharge.

A linen cloth dipped in camphorated spirits of wine, may be applied to the parts, and a bread and milk pultice, if excessively painful, or a little cooling ointment of elder, equal parts of each mixed together; a dose of manna and salts, or senna tea, or some cooling physic given in the morning, and an electuary made of one ounce of lenitive electuary, flower of brimstone, half an ounce of cream of tartar, two drachms, syrup of roses, a sufficient quantity to mix together; then take the bigness of a nutmeg twice a day, occasionally. Leaches applied to the part, or on the pile itself, gives great relief.

G R E E N W O U N D S.

S Y M P T O M S.

THE appearance and nature of green wounds must be various from the nature of the accident, by which they were occasioned, or the weapons from which they were received.

R E M E D I E S.

DRESS them daily with yellow basilicon spread
on

on fine lint, after fomenting them with a fomentation made of southernwood and wormwood, camomile flowers of each an ounce; bay leaves dried half an ounce. Boil them gently in six pints of water, and strain it off for use. Foment all green wounds as well as old sores with this before they are dressed every day.

BITE OF A MAD DOG.

S Y M P T O M S.

IT is necessary to mention the signs by which a dog that is mad may be known.

A mad dog is seemingly rapacious and thirsty, yet eats and drinks nothing; his eyes are fierce and flaming; he hangs down his ears, and thrusts out his tongue; froths much at the mouth, and barks at his shadow; oftentimes runs along sad and anxious without barking at all; frequently pants for breath, as if tired with running; carries his tail bent inwards; runs without distinction against all he meets, with great fury and bites; hurrying on in an hasty and uncertain course. Dogs that are well are afraid and fly, both at the sight and barking of one that is mad. The first mad symptom in a dog, is an unusual trembling.

With respect to the symptoms in persons bit, they are, principally, confused and mischievous looks, and an utter abhorrence of water.

R E M E D I E S.

MIX one pound of common salt in a quart of water, and then squeeze, bathe and wash the wound with the same for an hour, and not drink any of it; then bind a little salt to the part affected for twelve hours. But be very careful to apply it instantly after the bite of the animal.

F 2

Take

Take the leaves of rue, picked from the stalks and bruised, six ounces; garlic picked from the stalks and bruised, Venice treacle and mithridate, and the scrapings of pewter, of each four ounces; boil all these over a slow fire, in two quarts of strong ale; till one pint be consumed; then keep it in a bottle close stopped, and give nine spoonfuls to a man or woman, warm, seven mornings following, fasting, and six spoonfuls to a dog.

This will not fail, if it be given within a few days after the biting of the dog. Apply some of the ingredients from which the liquor was strained to the bitten place.

Bathing in the sea, where the patient can be accommodated with conveniences, is likewise deemed an admirable remedy.

To this we may add, that, to cure the bite of a viper or adder, if you will rub the part bitten with some of the fat of the animal, it will prevent any bad effects from arising; but if the fat of the animal cannot be procured, warm fallad oil will be attended with the same good consequences.

C A N C E R.

S Y M P T O M S.

THIS dreadful disorder originates from a small tumour, which often remains for years without encreasing, and does not change the colour of the skin. However, when the humour becomes more active, the swelling suddenly grows large, livid, round, unequal, painful, then breaks, and sharp stinking sores succeed, which eat away the sound parts, when the lips of the wound become exceeding disgusting to the sight. This disorder generally affects the breasts, but sometimes attacks the privities, ears, nose, and arm-pits.

R E M E D Y

R E M E D I E S.

A quarter of a pound of guaiacum shavings must be boiled in six pints of water, till the quantity is reduced to four pints, a pint of which, milk warm, must be drank daily. Fomentations of milk and water, and pultices of white bread and milk must be used externally, and the wounds should be defended from the cold air by a piece of fine linen, spread with spermaceti ointment, which should be renewed twice or thrice a day. This ointment is made thus. Take a quarter of a pint of the best salad oil, a quarter of a pound of white wax, and half an ounce of spermaceti. Melt them together over a gentle fire, and afterwards keep them stirring till the whole is cold.

C H I L B L A I N S.

S Y M P T O M S.

CHILBLAINS are swellings on the hands and feet, from excessive cold, accompanied with intolerable pains, prickings, itchings, heat, and redness.

R E M E D I E S.

ON their first appearance bathe them with snow water, if that can be procured, or hold them over the steam of boiling vinegar.

If they grow sore and break, use the fomentation mentioned, in the article of green wounds, and then apply a dressing of yellow basilicon, mixed with a few drops of spirits of turpentine, and spread on fine lint. A sparing diet should be used, and the parts affected kept warm.

I T C H.

I T C H.

SYMPTOMS.

THE itch is mostly communicated by infect on, and generally appears in small watery pustules about the wrists, and between the fingers, and affects the arms, legs, thighs, &c. is attended with intolerable itching, when sitting by the fire, but more particularly when in bed; is never dangerous, unless rendered so by neglect or improper treatment. It must not be suddenly drove in; after cure, have proper evacuations.

REMEDIES.

THE best medicine is sulphur of brimstone used externally; or internally, take flower of brimstone in treacle or milk every night and morning, and rub the parts every night, going to bed, with an ointment made of flower of brimstone, two ounces, crude salt ammoniac in fine powder, half an ounce, hog's lard a quarter of a pound, mixed together; the smell, if disagreeable, may be taken off by adding a few drops of essence of lemons; if necessary, rub the whole body; let it be done at different times; the linen should not be changed, and should afterwards be well dried and fumigated with brimstone, to prevent a fresh infection when cured, and three or four brisk purges, at different times, taken; it will not be amiss to drink a glass of cream of tartar whey every morning for a week or more, using wholesome food, and observing cleanliness.

S O R E E Y E S.

SYMPTOMS.

THE symptoms of sore eyes are easily known, being redness, a stiff gumminess, a salt rheum or
water

water flowing from them, weakness of sight, dimness, a painful heat in the eye-lids, and many others unnecessary to relate, as those who feel them must be well acquainted with their nature; proceed we therefore to the

R E M E D I E S.

WE shall here present our reader with the great Sir Hans Sloane's celebrated remedies.

Take of prepared tutty, one ounce; of lapis hæmatitis prepared, two scruples; of the best aloes prepared, twelve grains; of prepared pearl, four grains; put them into a porphyry, or marble mortar, and rub them with a pestle of the same stone very carefully, with a sufficient quantity of viper's grease, or fat, to make a liniment; to be used daily, morning or evening; or both, according to the conveniency of the patient.

The doctor prescribes bleeding and blistering in the neck, and behind the ears, in order to draw off the humours from the eyes; and afterwards, according to the degree of inflammation, or acrimony of the juices, to make a drain by issues between the shoulders, or perpetual blister. And for washing the eyes, recommends cold spring water. And the best inward medicines, which he has experienced, to be conserve of rosemary flowers; antiepileptic powders, such as Pulvis ad Guttetam, betony, sage, rosemary, eye-bright, wild valerian root, castor, &c. washed down with a tea made of the same ingredients; as also drops of spirit Lavendulæ Composit, and sal. vol. oleos.

If the inflammation returns, the Doctor says, drawing about six ounces of blood from the temples, by leaches, or cupping on the shoulders, is very proper.

The

The liniment is to be applied with a small hair pencil; the eye winking, or a little opened.

F I S T U L A.

S Y M P T O M S.

A deep, winding, callous ulcer, with a narrow entrance into a spacious bottom, and yielding a sharp virulent matter.

R E M E D I E S.

A quarter of a pound of elecampane root, three quarters of a pound of fennel seeds, and a quarter of a pound of black pepper; pound these separately, and sift them through a fine sieve; take half a pound of honey, and half a pound of powder sugar, melt the honey and the sugar together over the fire, scumming them continually, till they become bright as amber; when they are cool, mix and knead them into your powder, in the form of a small paste.

The dose is the size of a nutmeg, morning, noon and night, drinking a glass of wine or water after it.

If the above should not succeed, immediate recourse must be had to a skilful surgeon.

M O R T I F I C A T I O N.

S Y M P T O M S.

THE juices lose their proper motion and ferment, and thereby destroy the texture of the parts, and corrupt.

R E M E D I E S.

The part must be fomented every night and morning with hot flannels, wrung out, of the following fomentation :

Take

Take lime water a pint, and dissolve in it half an ounce of crude sal armoniac; then add three ounces of camphorated spirits of wine. Afterwards apply a pultice of stale beer grounds and oatmeal, moistened with a little hog's lard: when the part begins to suppurate, apply under the pultice a dressing of black basilicon inwardly.

Take a dram of the best Peruvian bark in fine powder, every four hours in a gill of mountain wine.

O L D U L C E R S.

S Y M P T O M S.

ULCERS are wounds or sores of long continuance, and their symptoms virulent matter issuing from them.

When any ulcer is of long standing, it is dangerous to dry it up, without substituting in the place of a discharge, (which is become almost natural,) some others; such as purging from time to time, or cutting an issue near the diseased part.

To forward the cure, salt meat, spices, and strong liquors must be most avoided: the usual quantity of flesh meat should be lessened, and the body be kept moderately open, by a vegetable, or milk diet; and if the ulcers are in the legs, it is of great importance to keep in a lying posture; for negligence in this material point changes the slightest wounds into ulcers, and the most trifling ulcers into obstinate and incurable ones. To cure which,

Take a quarter of a pound of basilicon, and an ounce and an half of oil of olives, and mix therewith half an ounce of verdigrease; dress the sore with this ointment, spread open a little tow, after fomenting it well with a decoction made of camomile flowers, and mallow leaves. Take frequently a dose of cooling physic, and live regularly.

S U P P L E M E N T.

DISEASES, whose Symptoms are obvious; with some useful and approved
RECIPES.

B A L D N E S S.

RUB the part with an onion frequently till it looks red, or rub it with bear's greafe, which penetrates more than any other kind of fat.

B L E E D I N G A T T H E N O S E.

APPLY to the back part and the sides of the neck, a linen cloth dipt in cold water, in which salt prunella has been dissolved. In very obstinate cases bleeding in the foot is useful. Internally, the quantity of a nutmeg of the following electuary may be taken three or four times in a day. Take the seeds of white henbane, and white poppies, each half an ounce; conserve of roses, three ounces; and mix them into an electuary with syrup of diacodium.

S P I T.

SPITTING OF BLOOD:

TAKE red rose leaves dried, half an ounce; twenty drops of oil of vitriol; one ounce and an half of refined sugar, and pour two pints and an half of boiling water on these ingredients in an earthen vessel; let it stand to be cold, and take half a quarter of a pint frequently. In this disorder, frequent bleeding in small quantities is proper, not exceeding four, or, at the most, six ounces at each time, according to the strength of the sick person.

A L I P S A L V E.

THIS may be made by adding a quarter of an ounce of alkanet root to the spermaceti ointment (mentioned among the remedies for a cancer) and letting them simmer together a few minutes over a gentle fire,

B I L L S.

APPLY a plaister of diachylon with the gums, once every day, till they are cured. To prevent their return, a few doses of cooling phyfic are proper.

BURNS AND SCALDS.

TAKE May butter unfalted, and white wax, of each six ounces; oil of olives, half a pint; lapis calaminaris one ounce and an half; melt the wax and butter with the oil, and stir in the lapis calaminaris finely powdered, till it is too hard to let it settle. This is an excellent ointment for the above purposes, and is to be applied once a day spread on a fine linen rag.

BRUISES, EXTERNAL.

BATHE the part with a little spirits of wine and camphire, which in slight cases will effect a cure but if

if that fails, it will be necessary to apply a pultice of stale beer grounds and oatmeal, with a little hog's lard, which must be applied fresh every day till the bruise is entirely cured.

BRUISES, INTERNAL.

TAKE a large spoonful of cold drawn linseed oil, two or three times in a day. The patient must also be blooded to the quantity of eight or ten ounces: and if the symptoms are violent, the bleeding must be repeated at discretion.

CHOLICK.

TAKE two ounces of Daffy's elixir, and repeat it as occasion may require; or half a drachm of powder of rhubarb toasted a little before the fire,

COLDS.

COLDS may be cured by lying much in bed, by drinking plentifully of warm sack-whey, with a few drops of spirits of hartshorn in it, or any other warm liquor; living upon puddings, spoon meats, chickens, &c. and drinking every thing warm. In short, it must at first be treated as a small fever, with gentle diaphoretics; such as half a drachm of the compound powder of contrayerva, taken night and morning; or half an ounce of Mindererus's spirit may be given every night going to rest, drinking a plentiful draught of weak sack-whey after it.

This is a much more easy, natural, and certain method, than the common practice by balsamics, linclius's, and the like, which spoil the stomach, destroy the appetite, and hurt the constitution.

ACHES AND PAINS.

RUB a little opodeldoch upon the part affected, two or three times a-day, and wear a flannel upon it.

it; if this does not give relief, take twenty drops of volatile tincture of guaiacum (prepared as directed in the Appendix,) every night and morning, in a glass of spring water.

H O A R S E N E S S.

TAKE an ounce of linseed oil, fresh drawn; half an ounce of sperma ceti; six drachms of white sugar-candy in powder; and an ounce and a half of balsamic syrup. Mix for an electuary. A spoonful of it to be taken now and then on the occasion specified by its title.

C O S T I V E N E S S.

TAKE the size of a nutmeg of lenitive-electuary every morning, or as often as occasion requires.

D E A F N E S S.

SYRINGE the ears well with some warm milk and oil: then take a quarter of an ounce of liquid opodeldoch, and as much oil of almonds; mix them well, and drop a few drops into each ear, stopping them with a little cotton or wool; repeat this every night going to rest.

C O R N S.

AFTER soaking them for a considerable time in warm water, pare away carefully with a penknife the uppermost and hardest surface: then apply a plaister of green wax, or diachylon with the gums, spread on thin leather; repeat this method (which is perfectly safe) a few times, and it will seldom fail to extirpate them entirely.

COUGH.

C O U G H.

TAKE oil of sweet almonds; and syrup of balsam, of each two ounces; four ounces of barley-water, and thirty drops of spirits of sal volatile; shake them well together, and take two large spoonfuls when the cough is troublesome. If this medicine does not remove the cough in a few days, it will be absolutely necessary to be blooded.

EXCORIATIONS IN CHILDREN.

DISSOLVE a little white vitriol in spring water, dip a rag into the liquid, and dab the part, which will heal it.

F A I N T I N G.

GIVE a few drops of sal-armoniac in a wine glass of water inwardly, and apply to the nostrils and temples some spirits of the same.



The METHODS pursued by the
Humane Society for the Recovery of
Persons apparently dead by Drowning.

THE society established in London for the recovery of persons apparently drowned, induced by a principle of humanity, have undertaken to make public the following methods of treating such cases, which are now practised in several countries of Europe with amazing success; and which they earnestly recommend to the attention of every man, but particularly to those who live in sea-port towns, or places adjacent to rivers, brooks, ponds, &c.

METHODS OF TREATMENT.

I. In removing the body to a convenient place, great care must be taken that it be not bruised, nor shaken violently, nor roughly handled, nor carried over any one's shoulders with the head hanging downwards, nor rolled upon the ground, or over a barrel, nor lifted up by the heels, except with the greatest caution. For experience proves, that all these methods are injurious, and often destroy the small remains of life. The unfortunate object should be cautiously conveyed to two or more persons, or in a carriage

carriage upon straw, lying as on a bed with the head a little raised, and kept in as natural and easy a position as possible.

II. The body being well dried with a cloth, should be placed in a moderate degree of heat, but not too near a large fire. The windows or door of the room should be left open, and no more persons be admitted into it than those who are absolutely necessary, as the life of the patient greatly depends upon their having the benefit of a pure air. The warmth most promising of success is that of a bed or blanket, properly warmed. Bottles of hot water should be laid at the bottoms of the feet, in the joints of the knees, and under the arm-pits; and a warming-pan, moderately heated, or hot bricks wrapped in cloths, should be rubbed over the body, and particularly along the back. The natural and kindly warmth of a healthy person lying by the side of the body, has been found in many cases very efficacious. The shirt or clothes of an attendant, or the skin of a sheep fresh killed, may also be used with advantage. Should these accidents happen in the neighbourhood of a warm bath, brew-house, baker, glass-house, saltern, soap-boiler, or any fabric where warm lees, ashes, embers, grains, sand, water, &c. are easily procured, it would be of the utmost service to place the body in any of these, moderated to a degree of heat, but very little exceeding that of a healthy person.

III. The subject being placed in one or other of these advantageous circumstances as speedily, as possible, various stimulating methods should next be employed. The most efficacious are, to blow with force into the lungs, by applying the mouth to that part of the patient, closing his nostrils with one hand, and gently expelling the air again by pressing the chest with the other, imitating the strong breathing of a healthy person: the medium of a handkerchief or cloth may be used

to render the operation less indelicate. Whilst one assistant is constantly employed in this operation, another should throw the smoak of tobacco up by the fundament into the bowels, by means of a pipe or fumigator, such as are used in administering clysters: a pair of bellows may be used until the others can be procured. A third attendant should, in the meantime, rub the belly, chest, back and arms, with a coarse cloth or flannel dipped in brandy, rum, gin, or with dry salt, so as not to rub off the skin: spirits of hartshorn, volatile salts, or any other stimulating substance, must also be applied to the nostrils, and rubbed upon the temples very frequently. The body must at intervals be shaken also, and varied in its position.

IV. If there be any signs of returning life, such as sighing, gasping, twitching, or any convulsive motions, beating of the heart, the return of the natural colour and warmth; opening a vein in the arm or neck may prove beneficial, but the quantity of blood taken away should not be large; nor should any artery ever be opened, as profuse bleeding has appeared prejudicial, and even destructive to the small remains of life. The throat should be tickled with a feather, in order to excite a propensity to vomit; and the nostrils also with a feather, snuff, or any other stimulant, so as to provoke sneezings. A tea-spoonful of warm water may be administered now and then, in order to learn whether the power of swallowing be returned: and if it be, a table-spoonful of warm wine, or brandy and water, may be given with advantage, but not before, as the liquor might get into the lungs before the power of swallowing returns. The other methods should be continued with vigour, until the patient be gradually restored.

We have been as circumstantial as possible in the above directions, that if one conveniency should be

wanting, the attendants may not be at a loss for others. Where the patient has lain but a short time senseless, blowing into the lungs or bowels has been, in some cases, found sufficient; yet a speedy recovery is not to be expected in general. On the contrary, the above methods are to be continued with spirit for two hours, or upwards, although there should not be the least symptoms of returning life. The vulgar notion that a person will recover in a few minutes, or not at all; and the ignorant, foolish ridiculing of those who are willing to persevere, as if they were attempting impossibilities, has most certainly caused the death of many who might otherwise have been saved.

Most of the above rules are happily of such a nature, that they may be begun immediately, and that by persons who are not acquainted with the medical art; yet it is always adviseable to seek the assistance of some regular practitioner as soon as possible; not only as bleeding is proper, and frequently necessary; but as it is to be presumed that such a one will be more skilful and expert, and better able to vary the methods of procedure as circumstances may require.

N. B. It is proper to observe, that these means of restoration are applicable to various other cases of apparent deaths; such as hanging, suffocation by damp and noxious vapours, whether proceeding from coal-mines, the confined air of wells, cisterns, caves, or the must of fermenting liquors; to those seized with apoplectic and convulsive fits, and also to the frozen.

Wherever any good has been produced by the means recommended, the person who has superintended the cure is desired to write a circumstantial account of it to James Horsfall, Esq; Treasurer, Middle Temple, or Mr. M. Robinson, Garden-Court, Middle Temple, Secretary to the Society.

An Universal PRESERVATIVE *against the*
 PLAGUE *or any other* INFECTION.

EVERY person, who sees others languishing under any sickness or distemper, if he has a mind to preserve himself from the infection, ought always to discharge his saliva, or spittle, and never swallow it, whilst he remains in the sphere of infected vapours; for the saliva is the first thing that very readily attracts the infected vapours, which being swallowed with it, are carried as it were, by this vehicle into the stomach, where they occasion most fatal effects.

The greater part of distempers, and particularly malignant fevers, are contagious. This contagion, arising from the ferment that proceeds from the sick person, diffuses itself as a vapour in the ambient air, and infects every thing to a certain distance; so that these infected vapours, being drawn into the mouth by respiration, are capable of corrupting the saliva, which being swallowed, infects the stomach, and afterwards the rest of the body. But when one spits, the body is secured from infection.

For this reason tobacco, or spicey substances, or of a strong smell, kept in the mouth and chewed, for exciting the saliva, may be of great service to all those who visit infected persons.

Directions concerning BLEEDING.

OF all the remedies recurred to in relieving the diseased part of mankind, there are none of such general service and advantage, as that of bleeding; as there is no one, on the other hand, attended with more pernicious consequences when indirectly and injudiciously ordered. A number of illnesses
 are

are absolutely owing to too great a quantity of blood; in which case there is ever of course an indispensable necessity for proportionably draining this fluid.

In all inflammatory distempers, it is next kin to a sacrilege to omit it: as it is, on the contrary, exposing the patient to the utmost hazard, to injoin it in a low, languid, depressed state, where the spirits before were too much exhausted, and nature, consequently, unable to support the least evacuation.

In a word, wherever prevail fore-eyes, a sciatic, a dry, husky cough, an head-ach, inflammations of the womb, or bladder, a virulent gonorrhœa, cordee, venereal stricture, inflamed piles, hot rheumatism, dry gripes, sore throat, an asthma, cholic, strangury, gravel, nephretic pains, hæmorrhages, an inveterate itch, and the like, the opening of a vein is of peculiar service. But in dropries, a jaundice, the gout, and all complaints arising from too great a relaxation of the vessels, or obstruction of them, remedies adapted to the respective disorders must be sought for from other specific quarters, without the least thought of increasing those disorders, by abrupt and preposterous bleeding.

F I N I S,



ANALYSIS

O F

Mr. *A R D E N*'s

COURSE of LECTURES

ON NATURAL AND EXPERIMENTAL

PHILOSOPHY.

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ADVERTISEMENT.

Having frequently heard the Subscribers to this Course request the Publication of some such Treatise as this, to serve by way of Memorandum or Pocket-Companion, for those Parts which would be most likely to escape the Memory; and at the same Time knowing that my Father was too much engaged in Business, to comply with those Requests; induced me to draw up this Analysis; which will I hope, in some Measure, answer the End proposed.



A N A L Y S I S
O F A
COURSE of LECTURES
ON NATURAL AND EXPERIMENTAL
PHILOSOPHY.

L E C T U R E I.

On the general Properties of Matter.

PHILOSOPHY is a Science that in every Age and Country, has, by the wise, and discerning Part of Mankind, been cultivated with the greatest Assiduity; nor if we consider its immense Use, could it well be otherwise.

To enumerate every Advantage which have accrued to the World from experimental Philosophy, would far exceed the bounds of this Analysis. Suffice it then to say; that there is not a single Art, or Science, to the Advantage of which it may not be applied. It inspires us

B

with

with noble and generous Sentiments, with the Love of Virtue, and the most exalted Ideas of the Omnipotent Creator of the Universe; and guides us in our researches through the Animal, Vegetable, and Mineral Worlds, which teem with Matter for the Exercise of our Minds: and nothing does in a more peculiar Manner assist us in demonstrating the Truth of a general Providence, and in explaining some remarkable Parts of Scripture. How noble then is it to exert in a superior Manner, the faculty of our Minds which is the Glory of our Nature, in this sublime Science; by which we are enabled to promote the highest Services to our Country, and to Mankind!

The Design of this Course of Experimental Philosophy, being to demonstrate in as familiar, and natural a Manner as the Nature of the Subject will admit, all those Principles by which the Universe is governed, regulated, and continued, and account for the various Phenomena, or appearances of Nature, which arise therein; it will be necessary to consider in the first Place, the known Properties of *Matter*.

By which Word, we are to understand whatever thing we can see, or feel; or whatever has any weight, presses, or resists pressure.

MATTER is the same in all Bodies, and all the Variety we observe amongst them, arises from the various Forms, Connections, or Adhesions of their first Particles.

All Bodies are EXTENDED.

This

When two Substances are combined Chemically they may be separated by *Elective Attraction*; (i. e.) the Application of a third Substance, which will unite with one, and separate the other from it. As is proved by Experiments in discovering the Strength of *Vinous Spirits*.

Acid and Alkaline Fluids being mixed together, will strongly attract one-another, which will cause a great Ebullition or Effervescence, and set at Liberty a large Quantity of Fixible Air from the two Fluids.

Upon this Principle of *Attraction*, variety of Colours will be *produced, destroyed, and restored*: from whence also may be deduced, methods for taking out *Stains* in *Silk*, *Iron-moulds* out of *Linen*, and *Ink* out of *Tables*, &c.

As Ink when good, is an Article that is extremely Valuable; I have here set down the Ingredients for making a good and durable Black Ink, as taken from Dr. *Lewis*. One Quart or three Pints of Wine, Vinegar, or Water; three Ounces of Galls; one Ounce of green Vitriol; one Ounce of Logwood; one Ounce of Gum Arabic.

The Ingredients may be all put together at once in any convenient Vessel, and well shaken four or five Times a Day. In 10 or 12 Days, or sooner, if set in a warm Place, the Ink will be fit for Use; though both its Colour and Durability will be improved by its standing longer upon the undissolved Ingredients.

Or

Or the Logwood and Galls may be first boiled in the Liquor for half an Hour, or more, with the addition of a little more Liquor to make up for that which evaporates in the boiling: strain the Decoction while hot, and add to it the Vitriol and Gum. Bits of old Iron, and broken Galls kept in the Vessel with the Ink, will improve the Colour.

Substances may act Chemically upon one-another. First, by *Solution*; when two Substances combine together.

When two Substances are combined Chemically, one is called the *Menstruum*, the other the *Solvend*.

A Menstruum, or Dissolvent, will only combine with a certain Proportion of a Solvend. As Water will only dissolve a certain Quantity of Salt.

Secondly, by *Precipitation*; when a Solvend unites with a Menstruum, and separates another from it, that falls to the Bottom.

Thirdly, by *Fermentation*; which is a spontaneous intestine Motion in Substances, whereby the Arrangement of the Parts is intirely altered.

CRYSTALLIZATION, is a Property in Bodies, when they become Solid, to form themselves into particular Shapes, and to run in certain Directions. This Power is capable of overcoming Resistances; Hence,

Water in freezing, often breaks the Vessel in which it is contained.

WATER

WATER is seldom, if ever, found perfectly pure. For Waters that run within, or upon the Surface of the Earth, contain, according to the different Substances through, or over which they run, various *Earthy, Saline, Metallic, Vegetable, or Animal Particles*. Snow and Rain Waters are much purer than those, although *they* also contain whatever floats in the Air, or has been exhaled along with the watery Vapours. The Method of trying the goodness and foulness of Waters, and also of detecting Frauds and Substitutes in Chemical Medicines, will be explained by proper Experiments.

REPULSION is that Power, by which Bodies are made to fly from each other; and where the Sphere of Attraction ceases, a repulsive Power begins. It is upon this Principle that Water repels most Bodies, till they are made wet; and Flies walk upon it without wetting their Feet.

This active Principle is proved by Experiments.

Surprising Experiments with Glass Bubbles, Proofs, &c.



LECTURE III.

ELECTRICITY.

THE Term ELECTRICITY, is derived from [*Elektron*] the Greek Name for Amber, which was first discovered to be in that Body, by Thales of Miletus, who flourished about six Hundred Years before Christ. But the first Person who expressly mentions this Substance is Theophrastus, about the Year 300 before our Saviour's Time; who says, in his History of Precious Stones, that it is the Property of Amber when excited by Friction, to attract not only Straws, but thin Pieces of Copper and Iron.

And from the great Improvements made since that Time, it is now extended to signify the like Power in all other Bodies wherein it resides, as Glass, Wax, Resin, &c.

It has also been found by Experience, that some Bodies will admit this Electric Matter, to spread over their Surfaces, and enter their Pores, but others will not.

The former of these, are called Non-electrics, or *Conductors*: which are *Metals, Ores, moist Wood, Water, Animal Bodies, and Vegetables.*

The latter, which will not admit the Electric Matter to enter their Pores, are called Electrics, or *Non-conductors*: which are *Glass, Amber, dry Air, Wax, Silk, &c.*

All

All Bodies upon the Earth, have a Quantity of this Electric Matter infused into them, which is called their *natural Quantity*, and it seems to lie in a quiescent State, till acted upon by Friction, when it is emitted in the Appearance of *Fire*.

Any Body having more than its natural Quantity of this Matter, is said to be electrified positively, or *Plus*; but having less than its natural Quantity, is said to be electrified negatively or *Minus*; which may be done either way by the common Machine. And Bodies being electrified either of these ways, will immediately repel each other; but some being electrified Positively, and others Negatively, will mutually attract each other: one Body being electrified Positively, and the other having no more than its natural Quantity, will also attract each other.

If a Feather be tied to the end of a Flaxen Thread, and presented to the Prime Conductor of the Machine, it will be strongly attracted by it, and if the Machine be kept Electrified, the electric Matter will be conducted from it, by the Thread to the Hand that holds it: so that notwithstanding the Feather is continually receiving an additional Quantity of Fire, it is conducted from it by the Thread as fast; by which Means the Feather must be constantly attracted towards the Prime Conductor.

If a Feather be tied to the end of a Bit of Silk, and presented to the Conductor as in the

last Experiment; it will be first attracted to it, by which Means it will receive more than its natural Quantity of the electric Matter, and as Silk is not a Conductor, the Feather will instantly be repelled, and will continue to be so till it has discharged its additional Quantity upon some conducting Body.

This *Electrical Attraction* and *Repulsion*, will be further illustrated by several curious and entertaining Experiments.

By Means of the Friction of the Glass Cylinder against the Leather Cushion belonging to the Machine, is accumulated a large Quantity of Electrical Matter from the Table and Floor on which the Machine stands; which is collected by some small sharp-pointed Wires placed near the Cylinder, in order to convey it to the Metal Tube that is supported upon Silk Strings, and which is generally called the Prime Conductor; near which if any conducting Body is held, Sparks of Fire will be perceived, accompanied with a crackling Noise, and is, what is called the **ELECTRIC SPARK**.

The same kind of Spark that is produced from the Earth by Machines, has, by the Assistance of an Electrical Kite, been brought from the Clouds; which was first attempted by the ingenious Dr. *Franklin*. And by the Electric Matter thus obtained, he performed all the electrical Experiments which are usually exhibited by an excited Cylinder or Tube.

From

From hence he deduced a Method of preserving Buildings from the dangerous Effects of Lightning, by having Metalline Rods erected by the Sides of Buildings, to restore the equilibrium of the Electric Matter between the Clouds and the Earth. For the Clouds are sometimes in a *Positive* and sometimes in a *Negative* State of Electricity; and if two such Clouds having different Quantities of the Electric Matter should meet; that Cloud which is *Positively* electrified, will discharge its abundance into the Cloud which is electrified *Negatively*, and with a Flash of Lightning the Equilibrium will be restored. The Fire in its Passage will rarify the Air, and the adjoining Air, in rushing in with great Violence to supply its place, will make the Report which we call *Thunder*.

If Water be made to go thro' the bore of a Capillary Syphon, it will fall in small drops; but as soon as the Water becomes electrified, it will then run thro' the Syphon in a quick Stream. Hence 'tis found that a Person's Pulse is accelerated almost one third by being electrified. This acceleration has been found of infinite service in *Obstructions* of all kinds, *Rheumatisms*, &c. and the Electrical Shock has been found very efficacious in removing *Deafness*, *Head-ach*, *Tooth-ach*, *Paralytic Cases*, &c.

The LEYDEN SHOCK, see an Explanation of it in the next Lecture.

L E C-

LECTURE IV.

ELECTRICITY.

FOR a Person to be ELECTRIFIED, it is necessary that he should stand upon a Cake of *Wax*, *Resin*, or upon a *Stool* with *Glass Feet* to it, (all of which are Non-conductors of the Electric Matter) to prevent any communication with him and the Floor; being so placed, if a communication be made from the Prime Conductor to him, he will be more replete with Electric Matter than before; and Sparks of Fire may be drawn from any Part of his Body equally the same as from the Conductor of the Machine.

The Electrical Matter is capable of setting Fire to several inflammable Bodies; such as *Spirits of Wine*, *Oil of Turpentine*, *Inflammable Air*, and *Gunpowder*; proved by Experiments.

In the Year 1743, the late *Professor Muschenbroek* discovered a Method of increasing the Force of the Electric Shock in a very surprising Manner. Having suspended a Cannon by Non-conductors, and holding a Glass Vessel in one hand, containing Water, which had a communication with the Cannon by Means of a Wire, and with the other Hand disengaging it from the Cannon, was surprized
by

by a sudden Shock in his Arms and Breast, which for some time deprived him of his Senses.

Dr. *Franklin* has observed that after the Leyden Phial is charged by the Electrical Machine, there is no more Electric Matter in it than there was before. For whatever Quantity of electrical Fire is thrown into the *inside*, an equal Quantity must come from the *outside*. Therefore we can only alter the State of the Phial. And as no more electrical Fire can be thrown into the inside of a Bottle, when all is driven from the outside, so in a Bottle not yet Electrified, none can be thrown into it, when none can escape from without, as will be illustrated by proper Experiments.

The similarity between Electricity and Lightning, appears, not only in its being able to set Fire to inflammable Bodies; but also in *fusing Metals, killing Animals, and rending Bodies* which resist its Passage; proved by Experiments.

That there is Fire in all Bodies, is proved by *Phosphori* and other Bodies producing Fire by Friction in a dark Room.



LECTURE V.

MECHANICS.

THE Earth attracts all Bodies that are near it: and the force with which Bodies when they are so attracted tend toward the Earth's Centre, is called *Gravity*.

ATTRACTION of GRAVITATION is that Power, by which Bodies are made to tend towards the Earth and one another.

This Power of Gravity from the Surface of the Earth upwards, is, at different Distances from the Earth's Centre, as the Squares of those Distances inversely.

That is, if the Gravity of a Body when it is at the Distance of one Semidiameter from the Earth's Centre, is equal to 1, at the several Distances 1, 2, 3, 4, &c. the Gravity of it will be as the Squares of those Distances inverted.

The Squares are 1, 4, 9, 16, &c. in this Proportion the Force of Gravity decreases, whilst the Distances from the Centre increase in the Proportion 1, 2, 3, 4, &c.

The *Momentum* or Quantity of *Motion* in Bodies, is as the Velocity and Quantity of Matter contained in them conjointly.

Therefore as the Quantity of Motion is always proportional to the moving Force; it is

is evident that two Bodies moving with equal Velocities, can make no difference in the Power of their Strokes ; except the different Quantities of Matter they contain. Thus two Balls, the one 500 lb. Weight, and the other 100 lb. moving with equal Velocities, the Ball of 500 lb. will strike with a Force four hundred times greater, than the Ball of 100 lb.

MOTION, its various Kinds and Affections, are by Sir *Isaac Newton* laid down under three general Heads, commonly called the three Laws of Motion. The first of which is, that all Bodies continue in the same State of resting or moving uniformly in a strait Line : unless some external Force impressed upon them, makes them alter that State. As is evident by considering, that it is a Part of the Effence of Matter, not only to be inactive or unable to produce Motion in itself, but even to make a Resistance to Motion when communicated to it by any external Cause. Also when a Body is in Motion, it is as impossible for it to stop itself, as it was to put itself in Motion when at rest.

For if a Vessel of Water is suddenly moved forwards upon an horizontal Plane, the Water will not have the Motion of the Vessel communicated to it suddenly, but remaining in its State of rest, will, where the moving Force acts, rise up against the Side of the Vessel and dash over. But when once the Water has the

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Motion

Motion of the Vessel communicated to it, and begins to move with a Velocity equal to that of the Vessel, then it will remain in a State of Motion; and if the Vessel is suddenly stopped, it will run against the other Side and dash over as before.

The second Law of Motion is, that the Changes made in the Motion of Bodies, are always proportional to the moving Forces impressed, and are produced in the same right Line in which those Forces act; that is, a double Force will produce a double Quantity of Motion, a triple Force, a triple Quantity, and so on. As suppose it was required to throw a Ball of Lead equal in Weight to 1 lb. with a certain Velocity, we know that to throw the same Ball with double the Velocity, it will require double the Force.

The third Law of Motion is, that *re-action* is always contrary and equal to *action*; or, the mutual Actions of two Bodies upon each other, are equal and in contrary Directions. Thus, if a Horse draws a Stone forwards, the Stone draws the Horse back equally: i. e. just so much Motion as the Horse communicates to the Stone, he will lose so much himself. For suppose him able if he had no Stone behind him, to push forwards with his Breast a Weight equal to 600 lb. it is evident that when he has a Stone of 400 lb. to draw, so much of his Strength will be laid out that way, as
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to leave him able to push forwards with his Breast no greater Weight than 200 lb. For $600 - 400 = 200$ lb. He has therefor lost a Quantity of Motion forwards, just equal to what he has communicated to the Stone, or as much as he draws the Stone one way, so much it draws him the contrary; and was it not for the Difference of 200 lb. which he has on his Side, he would not be able to move.

And from this Power of *Action* and *Re-action*, it is easy to account for the flying of Birds, swimming of Fish, and rowing of Boats; for when the Medium is by the Wing, Fin, or Oar, acted upon in any Direction, by an equal re-action, the Bird, Fish, and Boat are moved in a Direction just the contrary,

In Bodies considered mechanically there are three different Kinds of *Centres*, viz. The *Centre of Motion*, *Magnitude*, and *Gravity*. The *Centre of Motion* is that Point round which all the other Parts move, while it remains at rest.

The *Centre of Magnitude* in any Body is that Point which is equally distant from all its Parts.

The *Centre of Gravity* is that Point which being sustained, or prevented from descending, the Body will continue at rest.

The Method of finding this Centre, shewn by Experiment, also how a heavy Body may be prevented from falling by adding a heavier to it.

Some heavy Bodies when placed upon an inclined Plane *slide* down, some *roll*, and others *fall*. A Body is said to *slide* down, when it descends with the same Base or Side continually towards the Plane.

It is said to *fall* or *roll*, when the Line of Direction let fall from the Centre of Gravity falls without the Base.

From hence we may see the reason why *Towers* and other *Buildings* much inclined do not fall; for whilst the Line of Direction from the Centre of Gravity will fall within the Base, the Building will stand firm; but if the Line should fall never so little out of the Base, the Building will then fall.

The simple Mechanic Powers are usually reckoned six; but perhaps may more properly be reduced to three, viz. The *Lever*, *Balance*, and *Wheel and Axle* may be called one; the *inclined Plane*, *Screw*, and *Wedge*, two; and the *System of Pullies* three.

The LEVER is considered as an inflexible Line, void of Weight, and moveable about a fixed Point, called its *Fulcrum* or *Prop.*; and is applied either for raising Weights or overcoming Resistances. They are of three Kinds. First when the *Fulcrum* is between the Weight and the Power; second when the *Weight* is between the Power and the *Fulcrum*; third when the *Power* is between the Weight and the *Fulcrum*.

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To those of the first Sort belong the Iron Crows used for raising great Weights, as Stone, &c. Scissars also, and Snuffers, &c. are two Levers of the first Kind joined together.

The second Kind of Levers are Oars, &c. and cutting Knives as are made use of by Patten-makers, that are fixed at one End.

Levers of the third Kind are generally referred to the Bones of a Man's Leg or Arm; when a Weight is lifted by the Hand, the Muscle that is exerted to raise the Weight, is fixed to the Bone about one-tenth Part as far from the Elbow as the Hand is; and the Elbow being the Centre round which the Arm turns, the Muscle must therefor exert a Force ten Times greater than the Weight raised.

The Power of a *Compound Lever* is found by multiplying the Power of each into one another.

A BALANCE differs very little from a Lever, the Centre of Motion being looked upon as the Fulcrum. The Nature of which will be illustrated by proper Experiments.

The WHEEL and AXLE, or *Axis* in *Peritrochio*, is a very plain and useful Machine; and the Power gained, is just in Proportion as the Circumference of the Wheel exceeds that of the Axis; i. e. if the Wheel be six Times as large as the Axle, a Man may lift six Times as much by it, as by his own Strength, allowing for Friction.

PULLIES

PULLIES are either single or combined. A *single Pulley* that only turns round upon its Axis, gives no Advantage to a Power; it only serves to change the Direction thereof.

But by a *Combination of Pullies*, great advantage is gained. And the method of computing the Advantage, is only to observe the Number of Strings that go to the lower Block of Pullies. Thus, suppose a Man by his own Strength, or by a single Pulley, could raise and support 1 C. Wt. by the Assistance of a Set of Pullies which had five Strings going to the lower Block, he would be able to support 5 C. Wt. and so on.

The INCLINED PLANE, may be used with Advantage in raising Weights: the Power of it is, as its Length is to its height; (i. e.) a Cylinder may be rolled upon an inclined Plane, that is ten Yards in Length, and but one Yard perpendicular Height, with one tenth Part of the Force that would be necessary to lift it that Yard in a perpendicular Direction.

The SCREW is nothing more than an inclined Plane turned round upon a *Cylinder*, and as the Circumference of the Cylinder is greater than the Distance between the Threads, so much may the Power be less than the Weight or Resistance, and yet be able to Balance it. Therefor the greater the Circumference, and the smaller the Distance of the Threads,

Threads, the greater is the Power of the Screw.

The WEDGE is a Mechanical Power, consisting of two inclined Planes; the Power of which is according to its Length, but the Resistance is overcome according to its Thickness: therefor as the Length of the Wedge is to half the Thickness of it, so is the Power gained by its Use.

Of any *two* or *more* of these simple Machines combined together, all other Machines, however complicated, are composed: and in treating of them, they are to be considered as mathematically Exact, and moving without Friction.

Experiments relating to *Friction*, and the Method of loading *Wheel-Carriages*, will be illustrated by Experiments.

The PILE-DRIVING ENGINE, made use of at *Westminster* and *Black-Fryar's Bridges*, was contrived by one *Voulou*, a *Watch-maker*: it is fixed upon two Boats, and so contrived that while the Horses that Work it, go continually round, the Ram rises and falls from a great Height to the Top of the Pile, without the Horses being sensible when the Weight is disengaged from them, as the inequality of the Draught is regulated by a Fly. The Ram is immediately followed by a Pair of Tongs, that bring it up again: the Tongs are nearly counterpoised by an other Weight, whose small Rope is wound upon a Spiral Fusee, so as to
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cause the Tongs to fall with a uniform Velocity.

A curious Model of a new-invented *Seed Furrow Plough*, that ploughs, sows, and harrows three different Furrows at the same Time, will be shewn and explained.

LECTURE VI.

MAGNETISM, and Use of the GLOBES.

THE MAGNET or LOADSTONE, is an Iron Ore, found in many Parts of the World, and most commonly in Iron-mines. Some of its most remarkable Properties are the following. (1) In every Loadstone, there are two Points called its *Poles*, by which the Magnetic Virtue is emitted. (2) One of those Poles attracts, the other repels *Iron* and *Steel* only. (3) It communicates this Virtue to Iron by the Touch, which renders it strongly Magnetic. (4) A Piece of Iron, or Steel so touched, and suspended upon a sharp Point, will settle itself in a Direction nearly *North* and *South*. (5) The End of the Needle touched by the *South* Pole of the Stone, will point *Northwards*; and *vice versa*. (6) This Virtue may be communicated to Iron or Steel, by a strong Attrition all one way. (7) It pervades the Pores
of

of the hardest Bodies. (8) Iron Rods or Bars, by long standing in a vertical Position, will acquire a magnetic Virtue. (9) This Power is intirely destroyed by Fire and Rust, also by having their Poles laid all one way. Hence, in order to preserve Magnets, their Poles should be laid the contrary way; (i. e.) a *North*, and *South* Pole, together alternately.

THESE, and many other wonderful Properties of the Magnet, will be illustrated by proper Experiments.

ANY SPHERICAL BALL having a Map of the World accurately delineated upon it, will be a true Representation of the Earth: for the highest Hills are as inconsiderable with respect to the Bulk of the Earth, as the small Asperities upon the Rind of an Orange, are to the Bulk of the Orange. Any Ball so constructed, is called a TERRESTRIAL GLOBE; the principal Circles whereof are Ten. Six large Circles, and four smaller ones.

Circles are always divided, (or supposed to be divided) into 360 equal Parts, called Degrees: a large Circle divides the Globe into two equal Parts. A small Circle divides the Globe into two unequal Parts. The six large Circles, are the *Horizon*, *Brass Meridian*, *Equator*, *Ecliptic*, and two *Colures*, viz. the *Equinoctial Colure*, and *Solstitial Colure*.

The four smaller Circles are the two *Tropics*, viz. the *Tropic of Cancer* towards the *North*,

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and the *Tropic of Capricorn* towards the *South*. And the two *Polar Circles*.

The HORIZON, is either *Sensible* or *Rational*. For the Earth being a Spherical Body, the Horizon, or limit of our View, must change as we change our Place.

The SENSIBLE HORIZON, is all that Space that we see round about us, terminated by the Heavens, where they seem to touch the Earth.

The RATIONAL HORIZON, is a great Circle that may be supposed to be drawn Parallel to the *Sensible Horizon*, passing through the Centre of the Earth, and consequently dividing that, and the Heavens, into two equal Parts or Hemispheres.

The *Horizon* serves to determine the Altitude, Azimuth, and Amplitude of the Sun, Moon, and Stars, the Times of their rising, and setting, and the Length of their diurnal and nocturnal Arches.

The MERIDIAN, is that great Brass Circle wherein the Globe is suspended. Any Place being brought to the *graduated Side* of it, it is supposed to be *Mid-day* or *Noon*; it serves also to determine the Latitude of any Place.

The EQUATOR, is a large Circle that divides the Globe into two equal Parts, called the *Northern* and *Southern Hemispheres*. This Circle serves for the Hour-circle, upon *Adams's New Globes*, instead of the Brass Circle, about
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the North Pole of the *old Globes*; parallel to the Equator, is a small Semi-circular Wire, which goes through the Brass Meridian, and is inserted at the East and West Points of the Horizon, carrying an Index that points out the Hour; as the 24 Semi-circles drawn upon the Globe, each of which Represents the Geographical Meridian of any given Place; divides the Globe into 24 equal Parts, consequently as the Equator contains 360 Degrees, there will be 15 Degrees contained between any two of these Semi-circles, which are nearest to one-another: for $24 \times 15 = 360$. The Longitude of Places, is also reckoned upon this Circle.

The ECLIPTIC, crosses the Equator in two opposite Points, making an Angle of $23\frac{1}{2}$ Degrees on each Side of the Equator. So that one Half of the Ecliptic is in the *Northern*, and the other in the *Southern* Hemisphere. As the Earth goes round it once every Year, the Sun will appear to do the same, changing his Place almost a Degree, at a mean Rate, every 24 Hours. So that whatever Place or Degree of the Ecliptic the Earth is in, the Sun will appear in the opposite.

The Ecliptic is divided into 12 Signs, and each Sign into 30 Degrees, which are again subdivided into Halves and Quarters.

The great Circle that passes through the Equinoctial Points, at the beginning of *Aries* and *Libra*, and through the Poles of the

World, (which are two opposite Points, each 90 Degrees from the Equinoctial,) is called the EQUINOCTIAL COLUME.

And the great Circle that passes through the beginning of *Cancer* and *Capricorn* and also through the Poles of the Ecliptic, and Poles of the World, is called the SOLSTICIAL COLUME..

The TROPICS, are lesser Circles in the Heavens, parallel to the Equator; one on each Side of it, touching the Ecliptic in the Points of its greatest Declination; so that each Tropic is $23\frac{1}{2}$ Degrees from the Equator.

The POLAR CIRCLES, are each $23\frac{1}{2}$ Degrees from the Poles, all round. That which goes round the *North Pole*, is called the *Arctic-circle*, from the Greek Word, [*Arktos*] which signifies a Bear.

The *South Polar Circle*, is called the *Ant-arctic Circle*, from its being opposite to the *Arctic*.

The Circles upon the *Celestial Globe*, are the same as upon the *Terrestrial Globe*, but their Use is somewhat different. As upon the *Terrestrial Globe*, the Latitude of a Place is its Distance from the Equator, either North or South. And the Longitude of a Place is its Distance from the first Meridian either East or West.

But the Latitude of a Star, &c. is reckoned from the Ecliptic.

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Their Longitudes from the Equinoctial Colure, or first Point of *Aries*.

Comus's surprizing Metals and Figures, shewn and explained.

LECTURE VII.

On the SOLAR SYSTEM.

ASTRONOMY, is a Science which teaches us the Nature and Laws of the Heavenly Bodies. viz. the Sun, Moon, Stars, Planets, and Comets.

Various have been the Systems of Astronomy; but the only true one is called the Copernican, or Solar System, which consists of the Sun, six Primary Planets, ten Secondary Planets, and the Comets.

The six Primary Planets, are Mercury, Venus, the Earth, Mars, Jupiter, and Saturn.

The ten Secondary Planets, are the Moon, which is the Earth's Satellite; four Satellites that move round Jupiter, and five that move round Saturn.

The SUN is a vast Globe of Fire, placed in the Centre, and is the largest of all; his Diameter is computed to be about a Million of Miles, and his Distance from the Earth 83 Millions of Miles.

He revolves round about his Axis in 25 Days and 8 Hours. Upon his Face when viewed
through

through a good Telescope there are seen several dark Spots, by which his Revolution upon his Axis is discovered, as they are always uniform in their Motion over the Sun's Disk ; what these Spots are, has not been yet discovered.

The PLANETS move round the Sun, from West by South, to East ; in Orbits which are nearly circular, and but little inclined to each other.

The COMETS move in all manner of Directions, in Orbits which are very long Elipses, much inclined to one another, and to the Orbits of all the Planets ; how many there are, is at present unknown.

The Time in which any Planet moves round the Sun is the length of its Year ; and the Time in which it turns round its Axis, is the Length of its Day and Night taken together.

The first Planet, or that which is next to the Sun is MERCURY, whose Diameter is 3000 Miles, its Distance from the Sun is 42 Millions of Miles, and its hourly Motion in its Orbit is about 100 thousand Miles ; its periodical Revolution round the Sun is performed in 87 Days 23 Hours ; the Length of its Days and Nights are unknown, as it rises and sets too near the Sun for any Observations to be made of its Spots.

The second Planet is VENUS, whose periodical Revolution round the Sun is in 224 Days 17 Hours ; its Diameter is near 7900 Miles, its
Distance

Distance from the Sun is 79 Millions of Miles, its hourly Motion in its Orbit is 69 thousand Miles, and it turns round its Axis in 24 Days and 8 Hours.

The third Planet is the EARTH, which revolves about the Sun in 365 Days 5 Hours 49 Minutes, at the Distance of 83 Millions of Miles, its Diameter is 7970 Miles, its hourly Motion in its Orbit is 68,243 Miles, and it turns round its Axis in 24 Hours ; its Figure is not exactly round, but resembles the Shape of a Bowl made use of upon a Bowling-Green, which is called an *oblate Spheroid*.

The fourth Planet is MARS, at the Distance of 167 Millions of Miles from the Sun, its periodical Revolution is about 678 Days, and turns round its Axis in 24 Hours 40 Minutes, it moves at the Rate of 47,000 Miles an Hour, and by reason of a very dense Atmosphere with which it is surrounded has a red Appearance which is supposed to serve it as a Moon.

The fifth Planet is JUPITER, which is the largest of all, being near 90,000 Miles in Diameter, it revolves about the Sun nearly in 12 Years, its Distance from the Sun is 570 Millions of Miles, its hourly Motion in its Orbit is 30,000 Miles, and turns round its own Axis in 9 Hours 49 Minutes ; it is attended with four Moons or Satellites, some larger and some less than the Earth, which revolve round it, as our Moon does round us. It also appears to have
cloudy

cloudy Streaks crossing its Disk which are called Belts, and are supposed to be parts of its Atmosphere drawn into Lines by its very quick Revolutions about its Axis.

The sixth and last primary Planet is SATURN, the second in Magnitude, its Distance which is the greatest of all the Planets, is 949 Millions of Miles from the Sun ; its Diameter is near 70,000 Miles, its hourly Motion is 18,000 Miles, it revolves about the Sun in nearly 30 Years, it is attended with five Satellites, and is also encompassed with a Ring, but its use or what it is, has not been as yet discovered.

The ten secondary Planets, Moons, or Satellites, are, first the MOON which belongs to our Earth, it revolves about the Earth from Change to Change in nearly 29 Days 12 Hours 44 Minutes, which is the Length of her Day and Night taken together, for as seen from the Sun it turns only once round on its Axis in that Time. It revolves round the Sun in one Year. The Moon shines only by reflecting the Sun's light, being itself entirely an opaque Body.

The periodical Revolutions of Jupiter's Satellites are as follow.

Satellite		Days	Hours	
1	in	1	: 18	: 36
2	— —	3	: 13	: 15
3	— —	7	: 3	: 59
4	— —	16	: 18	: 30

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The periodical Revolutions of Saturn's five Satellites are as follow.

Satellite		Days	Hours
1	in	1	21 : 19
2	— —	2	17 : 40
3	— —	4	12 : 25
4	— —	15	22 : 41
5	— —	79	7 : 48

For the sake of easing the Memory, the above Calculations are given in round Numbers, and are the latest that have been made.

The apparent Motion of the Sun is owing to the diurnal Revolution of the Earth about its Axis from West by South to East ; consequently those heavenly Bodies which have no Motion of their own, must appear in the mean Time to revolve round the Earth from East to West.

The difference of *Seasons* is owing to the Axis of the Earth being inclined to the Plane of the Ecliptic at an Angle of about $66\frac{1}{2}$ Degrees.

The inequality of Days and Nights is owing to the Rotation of the Earth round its Axis.

An *Eclipse* of the *Sun* can never happen but when the Moon is in, or near one of its Nodes, and when it is in a strait Line between the Sun and the Earth.

An *Eclipse* of the *Moon* always happens at, or near the full, and when the Earth is between the Sun and Moon. All which with several other Phenomena will be very familiarly illustrated by an elegant ORRERY and PLANE-TARIUM, &c.

LECTURE VIII.

HYDROSTATICS;

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THE PROPERTIES OF FLUIDS IN GENERAL.

THIS Science when first invented by *Archimedes*, consisted only in the Art of weighing Bodies in Water ; but, as since improved, comprehends the Nature and Properties of Fluids in general.

A FLUID is a Body that yields to any Force impressed, and hath its Parts moved easily one amongst another.

The constituent Particles of a Fluid must be small, because they cannot be discerned with the best Microscope ; they must be round and smooth, because they move so easily one among another ; and hard, because no Fluid except Air or Steam, is compressible, or can be pressed into a less Space, than it naturally possesses, but in a very small Degree.

That Fluids *gravitate* or *weigh* in Fluids, is evidently proved by Experiment.

That Fluids *press in all Directions* may be proved by four Glass Tubes, open at both Ends and bent into different kinds of Angles, the Ends of which being immersed in Water, the Water will rise to the same Height (if the Diameters of their Bores be the same) in every one of them.

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Water considered *Hydrostatically*, is supposed to be divided into imaginary Surfaces. Thus take a long Glass, which, for the sake of Illustration may be divided by Threads at equal Distances; call the first Division A; the second B; the third C; and so on. Suppose each Division contains an Ounce of Water, the Surface then at B, will be pressed by one Ounce; that at C, will support two; that at D, three Ounces; and the Bottom will lie under the Weight of four Ounces of Water. Consequently the Fluid must remain upon a Level: as it is impossible that the lower Division should rise up and displace the other three, or that the upper one should, with the Weight of one Ounce descend and displace two. It is necessary also to consider Fluids as divided into *imaginary Columns*, in Manner resembling a Bundle of Reeds. These being all of the same Height, and Weight, must, by pressing equally on every Part, cause the Fluid to lie level.

Bodies *heavier* than Water, when placed at a certain Depth under the Surface, will be supported, and swim, by Means of the Pressure of Water upward, if the downward Pressure is by any Means kept from pressing upon the upper Surface of the Body.

Bodies *lighter* than Water, when pressed down to the Bottom of the Vessel so as to exclude all the Water from between it and the Vessel, will there remain; as it will then not only have its own Weight to overcome, but that of a Column

of Water equal in Diameter to the Body. A *heavy* Body immersed in a Fluid always endeavours to sink ; but as it cannot descend without removing an equal Bulk of the Fluid, that equal Bulk will re-act against the descending Body with all its Power, and as these two Bodies act in contrary Directions, it must lose as much of its own Weight, as is equal to the Weight of a Quantity of Water of its own Bulk.

Bodies *lighter* than Water will so swim in it, that a Quantity of Water equal to the Part immersed, will be equal in Weight to the whole Body. As when a Piece of Wood floats upon Water, a Part of it is below the Surface ; and as it sinks by its own Weight, it must displace a Quantity of Water just equal in Weight to its whole Bulk.

The SPECIFIC GRAVITY of Bodies signifies the Gravity or Weight of one Body compared with that of another under equal Dimensions. If the Weight of a Body in Air be divided by what it loses in a Fluid, the Quotient will shew how much heavier it is than its Bulk of that Fluid, or its Specific Gravity. Thus the Specific Gravity of Gold is to that of Water as 19 to 1, i. e. a Cubic Inch of Gold will weigh 19 Times as much as a Cubic Inch of Water.

A Table of the Specific Gravity of Bodies.

Fine Gold - - -	19,640.	Cast Brass - - -	8.
Standard Gold - -	18,883.	Steel - - - -	7,85.
Quicksilver - - -	14.	Iron - - - -	7,645.
Lead - - - -	11,325.	Tin - - - -	7,32.
Fine Silver - - -	11,091.	A Diamond - - -	3,4.
Standard Silver - -	10,535.	Common Water - -	1.
Bismuth - - - -	9,7.	Sea Water - - -	1,03.
Copper - - - -	9.	Dry Oak - - - -	,925.

The Method of finding the Specific Gravity of Bodies is performed by the Assistance of the *Hydrostatic Balance*, the Nature of which will be fully illustrated by Experiments, together with the *Hydrometer* or *Water-poise*, which is made use of for discovering the Strength of Spirituous Liquors, and also the different Specific Gravity of Fluids.

The Pressure of a Fluid upon the Base of a Vessel is always in Proportion to that Base, and the perpendicular Height of the Fluid, whatever be the Quantity of Fluid or Figure of the containing Vessel: Hence arises the *Hydrostatic Paradox*, that a small Quantity of Fluid may be made to press as much as any other Quantity how great soever; for two Tubes, the one a small one and the other very large, being joined together at their Bottom, and having Water poured into either Tube, it will just rise as high in the other, though one should contain ten thousand times as much as the other does.

LECTURE IX.

PNEUMATICS.

THE AIR is a thin, transparent, corporeal, and elastic Fluid, in which we live and breathe; which is generally called the Atmosphere. It surrounds the Body of the Earth to the Height of about 45 or 49 Miles high, in the same manner as the Down of a Peach does the Body of the Peach.

That the Air is a *Body*, is evident by its keeping all other Bodies out of the Place itself possesses; which may very easily be proved by taking a Glass, as suppose a Wine-Glass, and immersing its Mouth under the Surface of Water; it will be found that no Water will rise within the Glass, owing to the Resistance it meets with from the Air, of which the Glass is full. The same Glass being afterwards filled with Water, and a Piece of smooth Writing-paper pressed over the Top of it, so as to prevent any Air insinuating itself, between the Surface of the Paper and Edge of the Glass; if the Glass is now inverted, the Water will, by the Pressure of the Atmosphere, be kept in, and the Paper will remain *Concave* at the Bottom, which proves also, that the Air is capable of *supporting great Weights*.

Air, when compressed always endeavours to free itself from that Pressure, and regain its

its former Dimensions; which proves that it is *Elastic*.

The rise of VAPOURS, is owing to the great Power of Attraction, between the Particles of Air and Water; for Air is found to dissolve Water, in the same manner as Water does Sugar; therefor those Particles of Air that lie contiguous to those of Water, by constantly rubbing upon them, attract as much Water as they can sustain; which is afterwards taken up by the supra Parts of the Atmosphere: and thereby leaves the lowest Air in a State to attract and dissolve fresh Particles of Water.

Heat also, promotes both Evaporation and Solution; and *Cold* in a great Degree, stops both. Water raised by the Heat of a hot Day's Sun, immediately upon Sun-setting, precipitates in a fine Vapour, forming Drops of DEW upon all cold Bodies near the Surface of the Earth.

Air lying over marshy Ground, after Sun-set growing cold, lets its aqueous Particles coalesce into small visible Particles, which form the MISTS that are observed to rise over marshy Ground, in Summer Evenings.

Clouds, that are very replete with Vapours, will run into Drops, heavy enough to fall down in RAIN. And if the Atmosphere is cold enough to freeze those Particles before they form Drops, it will then become SLEET or SNOW. But if the Drops of Rain are
formed

formed, and in their descent, the Cold should be so great as to freeze them into Ice, they then fall down in Storms of HAIL.

The *Density* and *Spring*, or *Elasticity* of the Air, is always equal to the Pressure of the Atmosphere; because it always sustains that Pressure.

This Density is as the Force that presses it. Therefor it has been demonstrated by Mathematicians, that the Air decreases upwards in a Geometrical Proportion to the Altitudes taken in Arithmetical Progression. Thus,

At the Altitude of	$\left\{ \begin{array}{l} 7 \\ 14 \\ 21 \\ 28 \\ 35 \\ 42 \\ 49 \end{array} \right\}$	Mile from the	$\left\{ \begin{array}{l} 4 \\ 16 \\ 64 \\ 256 \\ 1204 \\ 4096 \\ 16384 \end{array} \right\}$	Times more ra-
		Surface of the		rified than at the
		Earth, Air is		Earth's Surface.

That the Air is *heavy*, is proved by weighing it in a Balance, the same as other Bodies; and by that means its *specific Gravity* is discovered.

The *Pressure* of the Air, among a Variety of other Experiments, may easily be proved by a Person laying his Hand upon the Top of an open Receiver, as the Air is exhausting; when they may observe, and very sensibly feel, the Spring of the Air in the Hand, forcing the Flesh down into the Glass, also the Weight of the Air on the back of the Hand, will press down the Skin and Flesh, between the Metacarpal Bones.

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The ascent of Fluids in Capillary Tubes, the same in Vacuo, as in the open Air, proved by Experiments.

The Construction of *Hiero's Fountain*, will be familiarly explained by the Model, while it is playing the Water up.

L E C T U R E X.

P N E U M A T I C S.

THE *Weight* and *Spring* of the Air, may be proved by the few following Experiments. Two Marble-Plains being suspended in a Receiver, and the Air exhausted, they will separate by their own Weight if not too thin, owing to the Pressure of the Air being taken away; for the lower Plain will then have nothing to support it, but a small Degree of Attraction of Cohesion.

A Receiver having a Piece of Bladder, tied over one End of it, and placed upon the Pump, upon exhausting the Air, the outward Pressure will press upon the Bladder, and burst it.

A square Glass Vial being placed under a Receiver, when the Air is exhausted the Spring of the Air within the Vial will be able to break it.

And owing to this Spring and Pressure of the Air, it is, that Variety of Jets of Water, and Quicksilver may be made.

Two Brass Hemispheres, four Inches in Diameter, being properly put together, and the Air exhausted from between them, they will require about 192 lb. to separate them; for at a Medium, a Circular Inch is subject to the Weight of about 12 lb. and therefor we may take this for a general Rule, for finding the Quantity of the Air's Pressure upon any Circular Plain whatever; since the Areas of Circles are in Proportion to the Squares of their Diameters.

And the Air presses with the Force of 15 lb. upon every square Inch. From hence, by an easy Calculation, upon the Body of a middle sized Man, there will be found continually the Pressure of 30 or 40 Thousand Pounds.

It was a common Opinion among the Antients, that when a Receiver is fixed to the Pump by exhausting the Air, it was owing to something within the Glass, drawing it down, which they called *Suction*. That it is not owing to *Suction* may be thus proved; a small Receiver being placed on one side the Hole of the Pump, and covered with a larger, upon exhausting, the Air will make its escape out of the small Glass by its Spring; and when the Air is suddenly let in again, it will fall upon the small Glass, and Press it fast down to the Pump: consequently it is not owing to *Suction*, but an Inequality of Pressure.

The

The Business of Respiration will be illustrated by proper Experiments for that Purpose.

The effects which rarified Air must have upon the Life of Animals, and upon Flame, is too obvious to need here a Description; for it is very well known that an Animal cannot live without Air, nor can Flame be supported without it. There is in all common Air, a certain vivifying Spirit, or something which is necessary for the Continuation of the Lives of Animals.

And this vivifying Spirit, by passing through the Lungs of Animals is destroyed; which is the Reason why an Animal when placed under a Receiver dies, though no Air be exhausted.

Also the Flame of a Candle under the same Circumstances will go out.

Air by passing through Fire, becomes vitiated: and also by remaining stagnant in any Place a considerable time, or by mixing with Steams arising from Mineral and Malignant Bodies, which is the Cause of Damps in Mines; the fatal Effects of which are too well known to those who are conversant in them. For it is sometimes so much vitiated, as to give immediate Death to any Animal Body that comes into it: it also deadens Fire, and extinguishes Flame.

There are other Damps which are called Fulminating or Fire Damps, that immediately explode upon the Application of any Fire to them.

The Method of medicating and inspiring Air, will be illustrated by a Machine invented for that Purpose by the *Author* of the *Lectures*.

All Bodies fall equally fast in Vacuo; as a Guinea and a Feather, let fall from the Top of an exhausted Receiver, will reach the Bottom at the same Time: for as each Particle in both Bodies is urged down by the same Force, they must of Course fall with the same Velocity, there being no resisting Medium to hinder them.

LECTURE XI.

PNEUMATICS.

THE Art of Diving, or living under Water, is performed by a Machine in Shape resembling a Bell; which is made of Wood or Copper, and loaded at the Bottom with a very considerable Weight to make it sink when full of Air, in a perpendicular Direction with the Mouth downward: The Diver being placed under this Bell is let down with the included Air to the Depth desired.

For the proper Management of this Machine it is necessary to remark the following Principles.

1. That Air is vitiated by passing through the Lungs of Animals.

2. That a Body immersed in a Homogenial Fluid, is always pressed with a Force proportionable to its Distance from the Surface.

3. That

3. That the Density of Air is always as the Force that presses it, viz. with 2, or 3 Times the Pressure, it will be pressed into half, or one 3d of the Space it before possessed.

As this Diving-Bell has received great Improvements from the late ingenious Dr. *Halley*, I shall beg Leave to give a Description of it in the Doctor's own Words :

The Bell I made use of was of Wood, containing about sixty Cubic-Feet in its Concavity, and was of the Form of a Truncate Cone, whose Diameter at the Top was three Feet, and at the Bottom five. This I coated with Lead so heavy, that it would sink empty, and I distributed the Weight so about its Bottom, that it would go down in a perpendicular situation, and no other. In the Top, I fixed a strong, but clear Glass, as a Window to let in the Light from above ; and likewise a Cock to let out the hot Air that had been breathed ; and below, about a Yard under the Bell, I placed a *Stage* which hung by three Ropes, each of which was charged with about one hundred Weight, to keep it steady. This Machine I suspended from the Mast of a Ship by a *Sprit*, which was sufficiently secured by *Stays* to the Mast-head, and was directed by *Braces* to carry it over-board, clear of the Ship-side, and to bring it again within-board as Occasion required.

To supply Air to this Bell when under Water, I caused a couple of Barrels, of about thirty-six Gallons each, to be cased with Lead, so as to
sink

sink empty ; each having a Bung-hole in its lowest Part to let in the Water, as the Air in them condensed on their Descent ; and to let it out again when they were drawn up full from below. And to a Hole in the uppermost Part of these Barrels, I fixed a Leathern Trunk or *Hose*, well liquored with Bees-wax and Oil, and long enough to fall below the Bung-hole, being kept down by a Weight appended ; so that the Air in the upper Part of the Barrel could not escape, unless the lower Ends of these *Hose* were first lifted up.

The Air-Barrel being thus prepared, I fitted them with Tackle proper to make them rise and fall alternately, after the Manner of two Buckets in a Well ; which was done with so much Ease, that two Men, with less than half their Strength, could perform all the Labour required ; and in their Descent, they were directed by Lines fastened to the under Edge of the Bell ; the which passed thro' Rings placed on both Sides of the Leathern *Hose* in each Barrel ; so that sliding down by those Lines, they came readily to the Hand of a Man, who stood on the Stage on purpose to receive them, and to take up the Ends of the *Hose* into the *Bell*. Thro' these *Hose*, as soon as their Ends came above the Surface of the Water in the Barrels, all the Air that was included in the upper Parts of them, was blown with great Force into the Bell, whilst the Water entered at the Bung-holes below and filled them ;
and

and so soon as the Air of the one Barrel had been thus received, upon a Signal given, that was drawn up, and at the same Time, the other descended ; and by an alternate Succession, furnished Air so quick, and in so great Plenty, that I myself, have been one of five, who have been together at the Bottom, in nine or ten Fathoms Water, for above an Hour and a Half at a Time, without any Sort of ill Consequence ; and I might have continued there as long as I pleased, for any Thing that appeared to the contrary. Besides, the whole Cavity of the Bell was kept entirely free from Water, so that I sat on a Bench, which was diametrically placed near the Bottom, wholly dressed with all my Cloaths on. I only observed, that it is necessary to be let down gradually at first, as about twelve Feet at a Time ; and then to stop and drive out the Water that entered, by receiving three or four Barrels of fresh Air, before I descended farther. But being arrived at the Depth designed, I then let out as much of the hot Air that had been breathed, as each Barrel would replenish with cool, by Means of the Cock at the Top of the Bell ; thro' whose Aperture, tho' very small, the Air would rush with so much Violence, as to make the Surface of the Sea boil, and cover it with a white Foam, notwithstanding the great Weight of Water over us.

Thus I found I could do any Thing that was required to be done just under us ; and that, by
taking

taking off the Stage, I could, for a Space as wide as the Circuit of the Bell, lay the Bottom of the Sea so far dry, as not to be over Shoes thereon. And by the Glass Window, so much Light was transmitted, that when the Sea was clear, and especially when the Sun shone, I could see perfectly well to write or read, much more to fasten and lay hold on any Thing under us, that was to be taken up. And by the return of the Air-Barrels, I often sent up Orders, written with an Iron Pen, on small Plates of Lead, directing how to move us from Place to Place, as Occasion required. At other Times, when the Water was troubled and thick, it would be dark as Night below ; but in such a Case, I have been able to keep a Candle burning in the Bell as long as I pleased, notwithstanding the great Expence of Air requisite to maintain Flame. This I take to be an Invention applicable to various Uses ; such as *fishing for Pearl, diving for Coral, Spunges*, and the like, in far greater Depths than has hitherto been thought possible ; also for the sitting and planning the Foundation of Moles, Bridges, &c. upon rocky Bottoms ; and for the cleaning and scrubbing of Ships' Bottoms, when foul, in calm Weather at Sea. But as I have no Experience of these Matters, I leave them to those that please to try. I shall only intimate, that by an additional Contrivance, I have found it not impracticable for a Diver to go out of our Engine to a good Distance from it, the Air be-
ing

ing conveyed to him with a continued Stream by small flexible Pipes ; which Pipes may serve as a Clew to direct them back again, when he would return to the Bell.

The Contrivance here mentioned, was a Vessel made in the Shape of a Bell, so big as to go over a Man's Head and Shoulders ; and when they came to the Bottom of the Sea, one of the Divers took this Vessel, and having put it over his Head, walked out of the Bell upon the Bottom of the Sea, round about, and had the Air conveyed to him by flexible Tubes.

BAROMETERS are Instruments made use of to determine the Air's Pressure at any Time. Various have been their Construction ; the most useful, as well as simple are made in the following Manner. Take a Glass Tube 34 Inches in Length, the Bore or Diameter of which ought to be half an Inch ; and the Top of it Hermetically sealed : At the open End fill it with Mercury that is quite clean and pure, then place your Finger upon the open End and invert it into a Basin of Mercury ; upon taking your Finger away, the Mercury will remain suspended in the Tube, at the Height of about 29 Inches sometimes higher and sometimes lower, according to the State the Air is in at that Time ; for whenever the Pressure of the Atmosphere, on any Part of the Earth increases, the Mercury in the Barometer will rise ; and the Clouds floating in the Atmosphere will be buoyed up to a greater

H

Height ;

Height ; and there will consequently follow clear and serene Weather ; and on the contrary, when the Pressure of the Atmosphere is by any Means decreased, the Mercury in the Barometer will fall ; the Air will become thinner, and the Clouds floating in the Atmosphere will rush into that Place ; and therefor there will follow cloudy or rainy Weather.

THERMOMETERS are Instruments made use of to measure the Degree of Heat and Cold in the Air at any Time. They are made of small Capillary Tubes with generally a round Bulb at the End, and filled to a certain Height with Mercury, and sometimes Spirits. All Fluids and Solids are, with certain Degrees of Heat and Cold capable of expanding and contracting. Mercury is a Fluid that is most sensibly affected by the least Degree of Heat and Cold, therefor is preferable to any other for the above Use.

HYGROMETERS are made use of for discovering the Degree of Moisture or Dryness of the Air ; and are generally made of Cat-gut, Whip-cord, or the Beard of a wild Oat. A Piece of Whip-cord suspended from a considerable Height, and having a Weight and Index fixed at the Bottom, if the Air is replete with moist Particles ; will twist up and become shorter, but if the Air is dry, it will be relaxed and become longer.

PYROMETERS are made use of for shewing the different Degrees of Expansion in Metals by
Heat ;

Heat ; the Nature of which will be illustrated by a curious Pyrometer that renders the Expansion of Metals visible to the 130,000th Part of an Inch.

Air is the proper Medium of *sound*, as is evident by placing a Receiver over a Bell which when rung can scarcely be heard, tho' the Receiver be not exhausted, but when the Receiver is exhausted no Sound at all can be heard ; for, as Sir *Isaac Newton* has demonstrated, Sounds as they rise from the tremulous Motion of Elastic Bodies, are nothing more than the Propagation of a Pulse in the Air shaken thereby ; so that by striking upon the Drum of the Ear they put the internal Air in Motion by the Expansion of the auditory Nerve which creates in us the Idea of Sound.

The great Quantity of Air in Eggs may be shewn by putting an Egg into a small Jar of Water under a Receiver, and upon exhausting, the Air may be seen rising up in little Streams thro' the Pores of the Egg.

Hot Water being put in a Glass Jar under a Receiver, when the Air is exhausted ; the Water will assume the Appearance of boiling, owing to the Heat causing the Air to expand itself in such large Bubbles, when the outward Pressure is taken off.

A Piece of raw Flesh being put under the Receiver in a Jar of Water and the Air taken away, innumerable Bubbles of Air will rise from its Surface.

Also if an Apple be pricked full of Holes and put into the Jar of Water under the exhausted Receiver, great Numbers of Jets of Air will rise from it thro' the Water.

If a Jar of cold Water be placed under a Receiver and Air exhausted, the Air contained in the Water will expand itself and arise very copiously from all Parts of the Water.

A Jar of new Ale or Beer placed under a Receiver, upon exhausting, the Air contained in the Beer will rise up and expand into innumerable Bubbles, which by means of the viscid Particles of the Beer, will be kept together and form a large Froth to the Top of the Jar.

The Construction of the Air-Pump, together with its Manner of working, will be illustrated by taking the Machine to pieces and explaining its different Parts.

PROJECTILES, and the Art of Gunnery will also be illustrated by proper Experiments.

Owing to the Elastic Power of the Air it is, that it may, by the Assistance of a forcing Syringe, be injected into Vessels of Strength till it becomes strong enough to throw a Bullet by its Spring to a very considerable Distance; as is made evident by an Air or Wind-Gun.



LECTURE XII.

OPTICS.

LIGHT consists of an infinite Number of the smallest and most subtle Parts of Matter, which flow in right Lines from a luminous Body ; as from a lighted Candle, there are continually flowing such Particles of Matter, in all Manner of Directions ; and those Particles by striking upon our Eyes, excite in our Minds the Idea of Light.

When these small Particles flowing from the Sun or from a Candle, or any luminous Body, fall upon any other Bodies, and are by them reflected to our Eyes, by a wonderful Property in Nature they excite in us the Idea of the Bodies they were last reflected from.

Its Velocity is so great that it is computed to move after the Rate of near twelve Millions of Miles in a Minuet : For it is demonstrable by the Eclipses of Jupiter's Satellites, that it takes about eight Minutes to move from the Sun to the Earth.

When a Ray of Light falls upon an opake Body, instead of passing thro' it, Part is absorbed, and Part is bent back in the same Direction it came, which is called Reflection.

A Ray of Light passing out of one Medium into an other, does not pass on in a right Line, but is a little bent, which is called Refraction.

When

When a Ray of Light passes out of a rarer Medium into a denser, it is bent towards the Perpendicular, and *vice versa*. Hence by the refraction of the Atmosphere it is, that we see the Sun five Minutes before it rises above the Horizon, consequently we see it five Minutes after it is set. When Rays fall perpendicularly on any Medium, they pass straight through without any Refraction.

A plain Looking-Glass being laid in an horizontal Position, having a Stick erected perpendicularly upon it; if a Ray of Light should fall obliquely upon the Glass near to the Bottom of the Stick, it will be reflected on the other Side of the Stick in the same oblique Direction, making an equal Angle on each Side the Stick, the former of which is called the Angle of Incidence, the other that of Reflection.

Those Bodies that are smooth and polished so as to reflect the Rays of Light regularly, are called Mirrours, which are of three kinds, viz. Plain, Convex, and Concave. An Object placed before a plain Mirrour, always makes the Image of that Object appear as far behind it, as the Object is placed before; and gives the true Representation of the Object, neither increasing nor diminishing it, as is very well known by Experience in the common Looking-Glass.

It is the Property of a Convex Mirrour to diminish the Image of an Object placed before it. A Concave Mirrour magnifies the Image of the Object;

Object: and a Person being placed before it at a certain Distance, will have the Representation of a Body suspended in the Air, between it and their Eye.

Glasses for Optical Purposes, may be ground into six different Shapes, viz.

1. A Plain-Glass, which is ground plain on both Sides, and is of equal Thickness in all its Parts; will refract the Rays of Light, but not collect them into one Focus.

2. A Plano-Convex, being Plain on one Side, and Convex on the other; if parallel Rays fall upon it, they pass through it, and are so refracted, as to unite in a Point called its Focus, just so far behind it, as is equal to the Diameter of the Sphere of its Convexity.

3. A Double-Convex, one that is Convex on both Sides; parallel Rays in passing thro' it, converge or meet in a Focal Point, at half the Distance they do through the Plano-Convex; and when these Rays meet in a Focal Point, it will burn.

4. A Plano-Concave, one that is ground plain on one Side, and Concave on the other, will diminish the Object, and make it appear less.

5. A Double-Concave, one that is ground concave, or hollow on both Sides, and according to the Laws of Refraction, parallel Rays in passing through, diverge or spread out, and make the Object appear less than the Plano-Concave.

6. A

6. A Meniscus, or Concavo-Convex, which is ground Concave on one Side, and Convex on the other.

Having already mentioned, that the Rays of Light are refracted in passing Obliquely through different Mediums: I must now observe, that some Rays of Light are more refracted than others; and that according as they are differently refracted, they excite in our Minds, Ideas of different Colours.

If the Sun is let to shine through a small Hole in a dark Chamber, and a Prism be held obliquely before the Hole; the Rays of Light in passing through the Prism, will suffer different Refractions; and falling upon the opposite Side of the Room, will paint upon it a Series of most beautiful, lively Colours; the largest Particles will be most attracted, and appear of a fine *Indigo Colour*; the next in Size, will appear to be of a *Violet Colour*; the next *Blue*; the next *Green*; the next *Yellow*; the next *Orange*; and the last *Red*.

These Rays being blended together by means of a convex Lens, will appear of a Yellowish White.

As White is a Composition of all Colours, so Black is a Privation of all, and therefor, properly no Colour.

All Bodies appear of that Colour, whose Rays they reflect most; as a Body appears Red, when it reflects most of the Red-making Rays,

Rays, and absorbs the rest; a Blue or Green Body reflects the Blue or Green-making Rays, and so of the Rest.

The Eye when taken out of the Head, is nearly Globular; and consists of three Humours, and as many Coats. The first Coat forms both the Anterior and Posterior Part of the Eye; the Anterior Part, is called the Cornea, which is Transparent; the Posterior Part, which is a Continuation of the Cornea, is called the Sclerotica: next within this Coat, is a very thin, soft, black Coat, called the Choroides; and within this, is that most curious one, called the Retina, which is the immediate Organ of Vision, and is an expansion of the Optic Nerve.

Close under the Cornea, lies a Water-like Fluid, called the Aqueous Humour, which serves to keep up a due Degree of Convexity in the Cornea. — The next Part that is met with is the Uvea, or Iris, in the middle of which is a Perforation or small Hole, called the Pupil. It serves to Regulate the Quantity of Light for distinct Vision, by the Assistance of muscular Fibres, with which it is supplied, called the Ligamentum Ciliare. These Fibres, by an admirable Power of contracting and dilating, alter the Convexity of the Crystalline Humour, and move it forward or backward in the Eye, to adapt it to the different Distances of Objects.

Behind the Iris, lies a hard Jelly-like Substance, called the CrySTALLINE Humour, in Shape resembling a Double Convex Lens, which converges the Rays that pass through it, to a Focus on the Retina.

The CrySTALLINE Humour, is enveloped by the Vitreous Humour, which is about the Consistence of the White of an Egg, it is transparent, and the largest of all in Quantity; it keeps the Eye in a globular Form, and serves to give the Rays of Light, a free Admission to the Retina.

The Rays of Light which flow from the several Points of an Object, through the different Humours, will meet each other again at so many respective Points upon the Retina, at the Bottom of the Eye; where there will be painted an inverted Picture of all Objects, that are placed before the Eye.

The Optic Nerve, is very wisely placed a little on one Side of each Eye, to prevent the same Parts of an Image from falling upon the same Parts of the Optic Nerve in each Eye, at the same time; as there is inserted the Optical Artery, near the Nerve, which renders the Image of Objects that fall upon it invisible.

If three Bits of Paper, be placed at about a Foot Distance from each other on a Wall, and the *left* Eye be covered, during the time that the *right* looks steadfastly at the *left Hand* Paper; by walking gently backwards, the
middle

middle will disappear ; walk a little further back and the *middle* will again appear, but the *right Hand Paper* will disappear.

The nearer any Object is placed to the Eye, the greater is the Angle under which it is seen ; therefor at the Distance of one Mile any tall Object will appear twice as large, as it would at the Distance of two Miles.

The Limit of distinct Vision in most Eyes is at the Distance of eight, or ten Inches ; but such as have the CrySTALLINE Humour, or the Cornea, or both of them, more convex than ordinary, can see distinctly at a less Distance, and are said to be purblind, or short sighted, and in order to see distant Objects distinctly, are obliged to make use of a Concave-Glass placed before the Eye. On the contrary, if the CrySTALLINE Humour, or Cornea, or both of them be too flat, a Convex-Glass must be placed before the Eye, as is the Case in most old Eyes.

A SINGLE MICROSCOPE consists of a small Convex-Glass, having the Object placed in its Focus, and the Eye at the same Distance on the other Side. The Method of finding the magnifying Power of this Glass, is thus : divide the least Distance, at which an Object can be distinctly seen with the naked Eye, by the Focal Distance of the Glass, and the Quotient will shew how much the Glass magnifies.

The

The DOUBLE or COMPOUND MICROSCOPE consists of an Object-Glass, and one or two Eye-Glasses. The Object is placed a little farther from the Object-Glass, than its principal Focus; this Image is viewed by the Eye thro' the Eye-Glass; and according to the last Calculation, if each Glass magnifies six Times, the Image will be magnified 36 Times in Diameter, and consequently 36 Times 36, or 1296 Times in Surface. To this Instrument there belongs a Concave Mirrour, which reflects the Rays of Light on the underside the Object, and the Object being placed in the Focus of a moveable Lens, has its upper Side also enlightened.

The SOLAR MICROSCOPE invented by Dr. *Liberkun*, a *Prussian*, about the Year 1740, is made use of in the following Manner. Having procured a very dark Room, let a Hole be made in the Window-Shutter, about three Inches Diameter, thro' which the Sun may cast a Cylinder of Rays into the Room. In this Hole place the Microscope, and the Rays will be sent in a rectilineal Line thro' the Tube, by the Reflection of the plain Mirrour on the outside; they will then pass through a Convex-Lens, after which they will fall upon, and enlighten the Object, which is placed in the Focus of a small Magnifier, through which a large inverted Image will be carried to a white Sheet placed at a proper Distance for its Reception.

DIOPTRIC

DIOPTRIC or **REFRACTING TELES-**
COPIES may be made of two Convex-Glasses,
 viz. an Object-Glass, and an Eye-Glass ; but
 Objects seen thro' these kind of Refractors are
 inverted, therefore they are only fit for viewing
 Celestial Objects.

A **REFRACTING TELESCOPE** for view-
 ing Terrestrial Objects should have two equal
 Convex-Glasses added to their Eye-Glass ; and
 as these three do but compose as it were one
 Eye-Glass ; they must all three stand at double
 their Focal Distances from one another. To
 find the magnifying Power of these Telescopes,
 divide the Focal Distance of the Object-Glass,
 by that of any one of the Eye-Glasses.

CATOPTRIC or **REFLECTING TELES-**
COPIES consist of a great and small Tube screw-
 ed to the End of one another. At the Bottom
 of the great Tube is placed a large Concave
 Mirrour with an Hole through its Middle. Pa-
 rallel Rays falling upon this Mirrour, are re-
 flected back by it, and form the Image near the
 small Concave-Mirrour placed towards the up-
 per End of the Tube, and opposite to the Hole
 in the large one. The Rays from this Image
 diverge to the small Mirrour, where meeting
 with a Convex-Lens, are refracted so as to form
 the Image in the small Tube, which now re-
 quires nothing but a proper Eye-Glass to send
 it duly magnified to the Retina. On the outside
 of the Tube is fixed a Screw that joins to the
 small

small Mirrour to adjust it to the greater or lesser Convexity of different Eyes; and also to the Object, for Rays coming from Terrestrial Bodies do not come parallel, but diverge a little, by which Means the Image is formed nearer the great Mirrour, than it is in viewing Celestial Objects; as the Rays from them always come parallel.

Great Variety of other Optical Instruments will be shewn and explained.

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ADVERTISEMENT.

NOTHING but the Love of Truth, and the Desire of imparting the Knowledge of it, is the Motive for publishing this Treatise.

Had any one undertaken the Task from the Hint, given by me nine Years ago in the Gentleman's Magazine, it would have saved me much Trouble, and afforded me more Pleasure.

But unwilling to let the Discoveries I had made perish with me; and thinking them of too interesting a Nature to be buried in Oblivion, I have made them public, wishing that the Subject may be pursued and improved for the Benefit of future Ages.

ALPHABETICAL

1700. The first of these, and the
most important, is the
history of the people of the
country.

Had any one taken the trouble to
give by an eye to the history of the
country, it would have found no small
of the most interesting.

But according to the history of the
people of the country, and the
history of the country, I have
found that the history of the
country is the history of the
people of the country.

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6. Pains and Swellings.
7. Wrenched Knee.

8. White Swelling.
9. Scalds and Burns.
10. Erysipelas.
11. Weakness and Loss of Strength from Lying-in.
12. Rheumatic Pains.
13. Decay of Sight.
14. Sciatic.
15. Violent Contusion from a Fall.
16. Tertian Ague.
17. Numbness.
18. Rheumatic Pains.
19. Distorted Hand.
20. Loss of Limbs after Lying-in.
21. Pain in the Back caused by frequent Miscarriages.
22. Gout in the Stomach.



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FIRE ANALYSED, &c.

INTRODUCTION

Treats of the contrary Powers, that are in Nature, both within and without Man, and of the rich Treasures to be found in the Writings of JACOB BEHMEN and Mr. LAW.

THE Generality of Mankind pass through Life without Reflection. No one, comparatively speaking, seeks to know himself, or enquires how he stands related to Nature or Nature to him. Having seen how others come into the World this satisfies him as to his own Existence; and as most are only solicitous how to preserve and indulge themselves, his Concern carries him no further than to tread in their Steps. But now and then one arises, who ventures out of this general Path, not satisfied with the mere Acts of Eating, Drinking and Sleeping, he begins to consider the End of Existence, and

this leads him to enquire into Nature, the Qualities of it, and of what it consists. Such an one, Reader, suffer me to say it; it is spoken without Vanity, is the Author of this Treatise. Perceiving throughout Nature Qualities diametrically contrary, this awakened his Attention to consider why and for what Reason there was nothing either within or without him but what had its Opposite. Without, his Eye clearly saw it. Within, his Feeling was his Evidence. Within, he felt the contrary Qualities of Anger and Love, Rage and Meekness, Joy and Sorrow, &c. Without, he perceived Fire and Water, Light and Darkness, Heat and Cold, Calms and Tempests, &c. Now in himself he observ'd these contrary Qualities often stirred up and exerting an uncontrollable Power. If Anger arose, it hurried him to Acts, that Reason condemned, but could not prevent. If Sorrow was stirred up, Joy disappeared, the Remembrance was gone, and it was as tho' it had never existed. Now these two contrary Qualities, he felt, had a Power to suppress and overcome each other; and also at the same Time that they were acted upon and called forth independant of his

his Will. Good News called forth Joy. Bad News stirred up Sorrow. Now this shows that Man has Powers within him that Sounds and Objects can do more with than has ever yet been effected by the boasted Ability of Reason.—But now as it is with the Powers of Joy and Sorrow, so is it with Rage and Meekness. They are equally and independant of Reason stirr'd up in us, but with this Difference, the former seems more prevalent in Mankind than the latter; the latter has its Stirrings, and often meets with Incidents that call it into Action, even in the most choleric; but the former prevails for the most Part in Man. The two first Children that were born of EVE are striking Instances of the Power of these two contrary Qualities ruling and governing in the Heart of Man. In CAIN *Rage* ruled and governed, in ABEL *Meekness*; but CAIN's *Rage* got the Mastery over ABEL's *Meekness*.

BUT now as to outward Nature, where the Will of Man cannot reach, there the contrary Qualities are regulated by an all-wise, but invisible Agent. The Heat and Cold are wisely temper'd, neither are suffered to destroy the other. The Earth an-

nually brings forth numberless Productions for the Service of Man ; but yet were these contrary Qualities suffered to work blindly by themselves, Vegetation would cease and every earthly Life would end ; for if the *Heat* prevailed, all would be burnt up. If the *Cold*, all would be one congealed and fixed Body. And yet I think it cannot but be visible to every one how necessary *Heat* and *Cold* are in the Creation and that they are always at work, but at the same Time governed and directed by an all-wise, and all-powerful Agent ; because if they were left to themselves, the one would soon be the Death of the other.

WHILST my inquisitive Mind was searching into these Things, and yet unable to find out the why and wherefore such opposite Qualities should be in Nature, providentially I met with two Authors, in whose Writings these Mysteries are explained, and Nature as it were dissected. These Authors are JACOB BEHMEN and Mr. LAW ; whose Works may be justly compared to a Mine full of the richest Ores. The Searcher and Enquirer after Truth will find in them *That* of so precious and sublime a Nature, as
must

must satisfy the most enlarged Capacity. Some indeed, who have casually stumbled on them, either prejudiced in Favour of their own supposed Knowledge, or having no Relish for the Truths contained in them, have despised and treated them with Contempt; but so it has been and ever will be with Men of Eminence. They will have their Despisers as well as Admirers; but Scorn and Contempt can never invalidate Truth. Truth will ever and invariably remain Truth, let its Opposers be ever so numerous: But that these Men have opened the deepest Truths in their Writings, if Experiments are any Criterion to judge from, I will, by those that are incontrovertible, make it clear and evident. But how I became able to prove by Experiments the Arcana of Nature, as laid open by JACOB BEHMEN and Mr. LAW in their Writings, shall be the Subject of the next Chapter.

CH A P. II.

Explains by Experiments the Arcana and Wonders of Nature, as opened in the Works of JACOB BEHMEN and Mr. LAW.

MY Attention was stirred up by a Book, published by Mr. LOVETT, of *Worcester*, setting forth a Variety of Cures perform'd by Electricity. I had seen many Years before this an electrical Machine, and had tried all the common Experiments that were then known; for very little had been written on the Subject, and that by no Means satisfactory; no one being able to trace out the Cause of the striking Appearances rais'd by an electrical Apparatus. Like other strange Sight's therefore, which the oftener they are seen, the less they affect us, so it happened with electrical Experiments. They tired and then naturally sunk into Neglect; for having lost their Power to keep up the Attention; and despairing of ever reaching the Cause, I left it, where I then thought it, impenetrably hidden, amongst the *occult Qualities*. But reading in Mr.

LOVETT

LOVETT of its Medical Virtue, this roused my Attention to a more accurate Disquisition, and to search minutely after what I had before given up as not to be found. I tried every Experiment my Imagination suggested, and at last discovered the Secret I sought for. But here I own that I owe my Success to a Letter of the ABBE NOLLET's* published at that Time in the Gentleman's Magazine. The ABBE was then trying Experiments, and maintained in his Letter that there were two Currents in the electrical Fire diametrically opposite. This Hint was enough for me, who was before sufficiently convinced that there were in Nature Qualities directly contrary and opposite to each other, both from my own Experience and JACOB BEHMEN's and Mr. LAW's Writings. But now I was able to demonstrate this Truth by Experiment, and to bring forth to open View these hidden secret working Powers, known only to us by their Effects. But what was more, I found now I could prove by Experiments to the Senses that there were in Nature seven Properties, as set forth and maintained in the Books of the
above

* Gentleman's Magazine Aug. 1759, p. 364.

above two eminent Writers ; the Ground of which are the two opposite Qualities before-mentioned. Such a Discovery, as may naturally be imagined, made me desirous of publishing it to the World, in hopes that some abler Hand might throw more Light on the Subject, accordingly I sent to the Gentleman's Magazine the following Letter, which was published in the Month of April 1762.

“ A LETTER to the Author of the Gentleman's Magazine : Wherein the Principles of Electricity are proved by Experiments to be the same with those of JACOB BEHMEN's, and Mr. LAW's Philosophy.

“ S I R.

“ WITHOUT making any Apology I send you this Letter, which I think, is on an interesting Subject.

“ My Design is not to make myself known, I only write for Information, and to stir up some abler Hand to finish what I think only the Outlines of a most important Discovery. For if JACOB BEHMEN's and Mr. LAW's Philosophy can be proved by Electricity, and, *vice versa*, Electricity can
be

be explained by their Writings; there is scarce any Phænomenon in Nature, but what may be made intelligible.

“ BUT not to detain you longer from what I intend to lie in as little Compass as possible, the following are my Experiments to prove, that Mr. LAW’s Philosophy is the same that the electrical Machine discovers to our Senses.

Mr. LAW says, “ there are seven Properties in Nature,” indeed he does not say this as the first Discoverer of this great Mystery, for he is candid enough to tell us from whom he had it; but as he was a perfect Master of it, and has given it to us in a Style more easy at first to be comprehended, than that of JACOB BEHMEN, from whom he had it; I scruple not to call it, Mr. LAW’s Philosophy.

“ IN proving these seven Properties, Mr. LAW says, “ Nature took its Rise from the “ Will of the Deity.” This he explains after the following Manner.

“ Will is Desire, now Desire has these Properties belonging to it, *compressing, inclosing, or shutting up; drawing or attracting.* Now the first of these, *compressing, inclosing,*

or

or *shutting up*, is contrary to the last, *drawing* or *attracting*, for the first has no Motion in it, but only compresses, holds together or endeavours to abide in Stillness; but the last has Motion in it, and therefore is contrary to, and never continues in a quiet State.

“ Now these two Properties brought forth by the same Will, have *equal Strength and equal Power*, and always act in Opposition to each other, which Opposition unavoidably produces a third Property, viz. a *whirling round*, for as the *holding fast* and *going out* are equal in Strength and Power to each other, and neither for the other's Opposition, can go backward or forward, up or down, each acting equally against the other, a *whirling round* must be caused.

“ Now these three, the *holding fast*, the *going out*, and *whirling round*, all necessarily arising from the Will of the Deity, Mr. LAW calls the *three* first Properties of Nature.—The *fourth* Property, he says, is *Fire*, produced from the violent Agitation, Motion and Anguish of the three first. The *fifth* Property, he says, is *Light*. The *sixth*,
Life,

Life, and by the *Seventh*, as JACOB BEHMEN also does, he means, *Spirit*.

“ Now I prove by the Help of the electrical Machine, these seven Properties to be in Nature, exactly as Mr. LAW has described them, after the following Manner.

“ ON the Conductor I tie several Threads of about four Inches long ; I then take an Hoop, the Diameter of which does not exceed the Atmosphere I am able to raise by the Friction of the Globe, and tie some Threads upon it of equal Length with those I tie on the Conductor. This done, I place the Conductor exactly in the Center of the Hoop, and on setting the Machine in Motion, all the Threads are immediately extended, those on the Conductor with their Points towards those on the Hoop, and those on the Hoop towards those on the Conductor.

“ THIS Phænomenon, so contrary to every Thing I ever yet saw, greatly astonished me ; for if we blow with our Lips, every Thing within the Reach of the Blast, flies from, but not to us ; but here tho’ there is a manifest Blast issuing from the Conductor (for it may be felt against the Hand) yet the Threads on the Hoop instead of flying from,
in

in the same Direction with those on the Conductor, act directly opposite and point to them; which is an evident Proof that there are two Streams or Currents, one issuing to, the other from the Conductor, or, in other Words, that, there are two Properties in Nature always acting contrary to each other, the one *attracting*, the other *repelling*.*

“ But here, perhaps, it may be objected that I carry Matters too far, in thinking I have discovered two *contrary Properties* in Nature, when it is evidently no more than a strange Appearance produced by an electrical
Ma-

* The ABBE NOILLET, by a Variety of Experiments, hath now put this beyond all Doubt. These Experiments Dr. WATSON tells us are sixty in Number, and exceedingly well chosen to prove the simultaneous Affluence and Effluence of the electric Matter.

I will only add one more Experiment, which I am not certain is included in the ABBE NOILLET'S.—Suspend a Bottle on the End of a Conductor supported either on Glass or Silk; let there be nothing near the Bottle and it will be found impossible to charge it, but apply a Finger to the Side and it will be filled and give a Shock. To the Finger it appears as if the Matter that ran in at the Top discharged itself at the Side; but the charging of the Bottle shows this to be a Deception, and proves at the same Time that for every Spark that came out of the Bottle, a Spark went into it likewise from the Finger; for these two opposite Powers can only be di-
vided

Machine, just as the Vibration of a Pendulum is produced by the Weight and Wheels of a Clock. This Objection, as it is natural to make it, I thought proper to mention, and then remove, that we may have the Way clear before us.

“ THE Vibration of the Pendulum is nothing more than an Effect, of which the Structure of the Clock is the Cause. But the electrical Machine is not the Cause of these strange Appearances; it is only the Means of making visible to us what is hidden in Nature, just as the striking together a Flint and a Steel is the Means of bringing forth

vided by Words; where one acts, there the other always is. But to put this beyond Dispute, remove the Finger and hold the Point of a Pin at the Distance of four or five Inches, and a Flame will be seen rushing from it, and the Bottle will fill and be charged as well, as if the Finger had been kept close to it.——

N. B. This *Flame* discovers to us another Secret, viz. that it is not Air but real Fire that issues towards the Bottle. I make this Remark, because some have concluded, that, as culinary Fires rarefy the Air around them, into which the denser Air presses, it is only Air that rushes into the electric Fire, and therefore that there is no such Thing as Attraction.——The Misfortune is, what we divide by Words, we suppose may be divided in Fact. But where Fire is, there is Air, and where Air is, there is Fire; for Fire always brings forth Air with it.

forth to our Sight the Fire that lay hidden within them. The Collision of the Flint and Steel is not the Cause or Maker of Fire, but only a Means of making visible what before was shut up and concealed from our Sight.

“ After the same Manner acts the Friction of the Globe against the Cushion; the Friction does not create these strange Appearances, but is only a Means of making them visible. Therefore I conclude, that what we see does not then begin to be, when the Machine is put in Motion; but that the Machine is a wonderful Discoverer of the hidden Properties of Nature, which are always acting in the same Manner, tho’ so secretly that our bare Sight cannot discover them.

“ Now that these two *Properties* acting thus contrary to each other are the Cause of a *continual Whirling*, Wheel or Circle, I prove from the *Leyden Experiment*.

“ IT is well known to all Electricians, that unless a Circle be made between the Bottom and Top of a charged Bottle, no Shock can possibly be given, but let a Bottle be charg’d and then a Communication
made

made between the Bottom and Top, and something of unparallelled Force will be found to act within it; but without making a Circle, we cannot come at any Knowledge of its Power. But its Strength is now so far ascertained, that nothing is found able to stand against it, and by the Help of large Jars its Power may be increased to a most astonishing Degree.

“ Now these *three Properties* made visible by the Help of the electrical Machine, are manifestly JACOB BEHMEN'S and Mr. LAW'S *three first Properties of Nature*.

“ THE *fourth Property, Fire*, will not require me to say much upon it, for it is well known that it is real Fire that bursts forth from the charged Jar or Bottle in the Explosion; and that it will set fire to Spirits, and properly prepared Combustibles.

“ THE *Fifth Property, Light*, follows from the Fire. This also requires no more to be said than that whoever has seen the Fire burst from the Bottle, must have seen Light, but indeed so much Light may be raised by the Machine with the Help of an Air-Pump as even to read large Print by it.

“ THE

“ THE *sixth* Property is *Life*. Now that Fire is the Radix of Life evidently appears from the following Experiment: Let a Cat and a Candle be put together into an Oven; let the Door have a Pane of Glass fixed in the Middle, so as no Air can penetrate it, and then let the Door be closely luted to the Mouth of the Oven, and you will perceive that the same Fire that is needful to keep up the Flame of the Candle is needful also for the Life of the Cat; for the Instant the Candle goes out, that Instant the Cat dies.* [But the Reader will find as he goes on much clearer Proofs for this Assertion.]

“ THE *seventh* Property is *Spirit*. This the Machine makes as evident as all the rest, for when it is put in Motion, there issues from the End of the Conductor a Spirit, or Air (for they are both the same) that may be felt; and, in Sensation is not unlike what we make when we softly blow upon our Hand with the Lips contracted: Now here the Machine ceases, here its Discoveries end, it has no more Properties to display, unless we call its lately discovered medical Virtue another Property; but this must

* Freke on Fire, p. 33.

must not be looked on as another Property, as all the rest manifestly and distinctly are, but rather a blessed Effect of the Whole."

"Now is it not astonishing that these two Men JACOB BEHMEN and Mr. LAW, should write so clearly and so justly of Nature, without the Help of any Instrument to assist them? JACOB BEHMEN especially, writes in the Style in which an Electrician would express himself; for he speaks of the Fire bursting forth with a violent Crack, and so exactly describes the Noise and Flash, that one would think, at first Sight, he had seen the Fire collected in a Bottle and then discharged.*

"AND now, Sir, tho' I make no doubt many will be carping at what has here been said, as has been the common Practice with Respect to those eminent Writers above-mentioned, whose Philosophy now stands established on Experiment, yet so long as this Maxim of the Schools, *sensus non possunt falli*, remains good, what is founded on Experiment cannot be shaken. However this one Thing I require of every Opposer that he produce his Experiments to support his Op-
C position,

* See BEHMEN's Threefold Life. Page 16, 17, 18.

position, in as clear and candid a Manner as I have, to elucidate this Philosophy. There can be no Deception in Experiments; I shall therefore take no Notice of any Answerer, unless he contradicts by Experiment, what by Experiment, I think I have clearly demonstrated."

No one, that I have heard of, ever made the least Objection to the above Letter, but my hope was, that some one or other would have thrown greater Light on the Subject; for many Persons were at that Time trying Experiments; and several since have wrote on the Subject, who have incontestably proved that what used to be called electric Matter, is real Fire, and that it exists and is to be found in every Place; but no one has yet attempted to show what this Fire is, from whence it proceeds, or whether it be an Unit or composed of Parts. This I shall endeavour to elucidate in the following Chapters.

C H A P. III.

Proves that there is only one Fire in all Nature, demonstrates by Experiments that Fire is the Life of all Things, and contains a curious Remark on Precipitate.

CUSTOM, which too often tyrannizes over our Understanding, has hitherto arbitrarily fixed the Epithet *Electric* to a Machine, which bids the fairest to be the most wonderful Instrument ever yet discovered; either for its Usefulness, already found out, in the Medical Way, or for Experiments in natural Philosophy. But I will not here contend with Custom, it is of too stubborn a Nature to yield to Reason or Argument. Only I would endeavour to free the Reader's Ideas from Confusion, lest when I speak of *electric Fire*, he should imagine that it is something dependent on, or produced by, the *Apparatus*. I would therefore here remark, that there are not in Nature two *Fires*, or *Fires* of a different Quality from each other, but that the Fire, by which we warm ourselves, is the very

same as that made visible by an electrical Apparatus. But with this Difference, the first forbids us to approach too near it, that raised by a Machine may be as safely felt as cold Water ; and yet *this* may be excited to as high and inflammable a State, as the Flame of a Candle with which our Fires are lighted.

FIRE is the most wonderful of any Thing we have to do with ; and yet scarce is any one's Curiosity or Astonishment raised by it. The Reason is, continual Use gets the better of our Attention. Knowing how to procure Fire whenever we want it, we are under no more Concern than to get those Materials, that can furnish us with a Sufficiency of it for all our Purposes ; thus Day after Day we let pass unnoticed the most astonishing of all the Elements ; even Chymists, who make so much Use of Fire, have never yet, as I have read, entered further into it than to try its Effects, and how far it would operate. But now it is found to be compounded of several Parts ; by the Help of an electrical Machine we can analyse it, and show all its Properties distinctly to the Senses.

BUT

BUT as I have here spoken of the Chymists, I will mention an Incident that happened when I was once trying Experiments. A very ingenious Chymist being present I asked him if he would taste the Fire, the Question startled him, but seeing me do it, he was encouraged to try, but rose from the Chair with Astonishment. " I taste, said he, an *Acid*, and now I know, what I never could account for before, that it is the *Acid* in Fire that gives the *Spicula* to *Precipitate*." This Observation I thought too curious to omit. But as well as being tasted, the Fire may be also smelt, for after a Machine has been worked some Time in a close Room, a strong Smell of *Sulphur* may be perceived. But no more of this now. I would speak here expressly of Fire, and not of its Properties.

IT was the Opinion of the Ancients that Fire was in every Thing: Nay that every Thing living, whether Animal or Vegetable, owed its Life to it; for this Reason they called it the *Anima Mundi*. From whence they got this Truth, or from what Experiments they drew their Conclusions, it is not

material to enquire ; an electrical Machine will verify it to our Senses.

JACOB BEHMEN tells us, his Knowledge of Nature was open'd in him by God. This is an Assertion that many may call his *ipse dixit* ; be that as it may, it reduces us to this Dilemma, either to allow or deny what he says. If we deny, to what or whom shall we attribute those deep and wonderful Discoveries that are to be found in his Writings, and which Experiment proves to be true ? Many have been the Abuses poured upon him from every Quarter ; but which should be most regarded, the Ravings of Folly, or the Evidence of the Senses ?

MR. BOYLE in his Book on the Usefulness of experimental natural Philosophy, says, like a Man of Candor (Page 283,) “ Perhaps neither Nature nor Mankind is much beholden to those, that too rigidly or narrowly circumscribe or confine the Operations of Nature, and not so much as allow themselves or others to try whether it be possible for Nature, excited and managed by Art, to perform diverse Things, which they never yet saw done, or work by diverse
Ways,

Ways, differing from any, which by the common Principles, that are taught in the Schools, they are able to give a satisfactory Account of."

JACOB BEHMEN and Mr. LAW have written, I own, of Nature quite different from all other Writers. But is this a Reason for rejecting what they have said? GALILEO, the famous Inventor of the Telescope, for maintaining the Copernican System, a System now generally receiv'd, was twice thrown into the Prison of the Inquisition as an Heretick. But because his Persecutors, the Jesuits, did not then believe that the Sun was a fixed Body and that the Earth moved round it, were his Assertions less true? Time and Experience have removed this Prejudice, and fixed the Error on the right Persons. "One shall rarely meet, says the Author of GALILEO's Life, with a more glaring Instance of Blindness and Bigotry." To condemn an Author because he has written contrary to our preconceived Opinion is as good an Argument of sound Sense and Understanding, as to pronounce that Fruit bad and good for nothing, which we have never tasted.

WHEN

WHEN JACOB BEHMEN was strictly examined at the *Saxon* Court by Men of the greatest Learning, Professors in every Science, brought together for this Purpose by the Elector, they discovered so much Honesty, Candor, and good Sense, that not one of them condemned him, even tho' he said many Things to them far beyond their Comprehension. What he declared was from an Insight given him by God into Nature. Now that there is a Power in Nature always at work, is evident from the Effects. But what is this Power? *It is Fire.*—The tenderest Leaf on the highest Tree shows at the extremest Part of it that there is Life, but what causes this Life? *It is Fire.*

BUT that no one may say this is my *ipse dixit*, the two following Experiments are here introduced that the Senses may have full Proof of the Assertion.

EXPERIMENT the FIRST.

PLUCK a Branch from any Plant, the Leaves of which would not be too ponderous for the Power you are able to raise with your Machine, and observe when its Leaves begin to droop, at this Crisis place it on your
Glasses

Glasses and electrify it; and you will see that the *Fire* will have the same Effect upon it, as when it was growing upon the Plant; the *Fire* will pervade and circulate thro' every Part of it, and make it appear as if it was living.

EXPERIMENT the SECOND.

TAKE two Plants of equal Size and similar Appearance in Pots; electrify one of them for a Quarter of an Hour or ten Minutes every Morning. In a few Days you will see a manifest Difference. The electrified Plant will outstrip and look much more flourishing than the other. Now what stronger Proof than this can we have that *Fire*, as JACOB BEHMEN and Mr. LAW assert, is the *Radix* of Life. In the Plant growing in the Garden, we can only see the Effect of the vivifying Power swiftly pervading and rapidly circulating thro' every Part. In the electrified Plant we see the Cause as well as perceive the Effect of the subtil Fluid.

I SHALL conclude this Chapter with a Passage out of Mr. LAW's Appeal apposite to my present Subject. "The Reader, says he, (Page 163) ought not to wonder or be
offended

offended at the frequent mention of the Word *Fire*, which is there used to denote the true Nature and State of the Soul. For both Nature and Scripture speak continually the same Language. For wherever there is mention of Life, Light, or Love in the Scripture, there Fire is *necessarily* supposed, as being that in which all Life and Light and Love must necessarily arise, and therefore the Scriptures speak as often of Fire, as they do of Life and Light and Love, because the one necessarily includes the other. For all Life, whether it be *Vegetable*; *Sensitive*, *Animal*, or *Intellectual*, is only a kindled Fire of Life in such a Variety of States, and every dead insensitive Thing is only so, because its Fire is quenched, or shut up in an hard Compaction. If therefore we will speak of the *true Ground* of the fallen State of Men and Angels, we are not at Liberty, to think of it under any other *Idea*, or speak of it in any *other Manner* than as the *darkened Fire* of their Life unable to kindle itself into Light and Love. Do not the Scriptures strictly confine us to this Idea of Hell? So that it is not any particular Philosophy or affected Singularity of Expression, that
 makes

makes me speak in this Manner of the Soul, but because all Nature and Scripture forces us to confess, that the Root of all and every Life stands and must necessarily stand in the *Properties of Fire.*”

“THE holy Scriptures also speak much of Fire in the Ideas, which they give us both of the divine Nature and of created Spirits, whether they be saved or lost. The former, as becoming Flames of heavenly Light and Love; the latter, as dark Fire-brands of Hell.”

“IT ought to be no Reason, why we should think *grossly* of Fire, because it is seen in so many *gross Things* of this World. For how is it seen in them? Why only as a *Destroyer*, a *Consumer*, and *Refiner* of all *Grossness*, as a *Kindler* of Life and Light out of Death and Darkneſs. So that in all the Appearances of Fire, even in earthly Things, we have reason to look upon it as something of an heavenly, exalting and glorious Nature, as that which diſperſes Death, Darkneſs, and Groſsneſs, and raiſes up the Power and Glory of every Life.”

“THERE is but *one Fire* throughout all Nature and Creature, ſtanding only in different

ferent States and Conditions. The Fire that is in the *Light* of the Sun; is the same Fire that is in the *Darkness* of the Flint. That Fire which is the Life of our Bodies, is the Life of our Souls; that which *tears* Wood in Pieces is the same which *upholds* the beauteous Forms of Angels. It is the same Fire that *burns* Straw, that will at last melt the *Sun*; the same Fire that brightens a *Diamond* is darkened in a *Flint*. It is the same Fire that kindles Life in an Animal, that kindled it in Angels. In an Angel it is an eternal Fire of an eternal Life; in an Animal it is the same Fire brought into a temporary Condition, and therefore can only kindle a Life that is temporary; the same Fire that is mere Wrath in a Devil, is the Sweetness of flaming Love in an Angel; and the same Fire, which is the majestick Glory of Heaven, makes the Horror of Hell."

C H A P. IV.

Shows that the Systole and Diastole of the Heart is caused by Fire, and that Fire is the Cause of the Redness of the Blood.

IN the last Chapter I gave a Quotation from Mr. LAW, in this I shall give several, but short, from JACOB BEHMEN, as a Prelude to what I have further to advance. In his Clavis at the End of the Forty Questions concerning the Soul: Verse 98. *In Fire and Light, saith he, consisteth the Life of all Things, let them be insensible, vegetable or rational Things.* In the Threefold Life, Chap. viii. Ver. 31. *Every living Life is a Fire: And yet the proper Source of the Fire is not the right Life, but the Tincture which proceedeth from the Fire is a pleasant Joy, and it is the Liberty of Nature, which is the right Life.* But to make this plainer by another Quotation, lest the Word *Tincture* should not be easily apprehended; in the 10th Ver. in the 17th Question concerning the Soul. *The Fire, saith he, is wrathful, the Light is mild and lovely: In the Light is the Life,*
and

and in the Fire the Cause of the Life. But this Life (speaking of the natural Life, Three-fold Life, Chap. viii. Ver. 34,) is fragile and consisteth only in four Forms, viz. in Fire, Air, Water, and Earth, which is its Body. In the seventh Question concerning the Soul, Ver. 16. As to the Soul only, beside the Spirit, it is a Globe of Fire. And in the ninth Question, Ver. 2. the Soul standeth in the Blood of the Heart, there it hath its Seat and Original. In the first Question concerning the Soul, Ver. 134. Understand the great Mystery further. You see that every Fire giveth Light, and you see also that Air goeth forth from the Source of the Fire, and you know very well that if the Fire had no Air to blow it up, it would be smothered, as all Fires are smothered when they have no Air, and yet they produce Air. Ver. 136. You see that all Fire must have Matter or else it will not burn; understand it thus, the Fire produceth Air and in the Air, Water, and it mightily attracteth the Air with the Water into itself again, whereby the Source of the Fire is so allayed that it shineth, for without Water no Fire shineth; if no Water can be produced in a Thing, in that Thing the Fire will not shine. In the

Book of Regeneration, Ver. 19. *Who would believe that Fire generateth Water and that the Original of Fire could be in Water, if we did not see it with our Eyes in Tempests of Thundering, Lightning and Rain; and did not find also that in living Creatures the Fire in the Body dwelleth in the Blood, and that the Blood is the Mother of the Fire, and the Fire the Father of the Blood.*

BUT BEHMEN hath gone much deeper than this, even to the Properties antecedent to Fire, which is before shown in Chap. II, and proved by Experiment the first. But I would here ask, what is that Heat and from whence does it proceed, that warms the Body, and by which so long, but no longer than it warms, the Limbs are enabled to perform their Offices? Shall I be answered, it is the Blood that causes this internal Warmth by its *Velocity, Friction, and Attrition* through the Veins and Arteries. But then what causes this rapid Circulation? There must be some Power to put the Blood in Motion. Experiments now have fixed it beyond all doubt that it is *Fire*, the *Fire* of which every rational, Animal and Vegetable Life consists. But look back to Chap. II.

Expe-

Experiments the first and second, and there you will see how the three first Properties of Nature work, which are antecedent to Fire. The electrical Machine exhibits to our Senses, that there is a continual Influx and Efflux, and that these two Opposites always acting contrary to each other cause a Whirling or Circulation, and that this violent Motion produceth Fire. So that wherever there is Fire, there is always *a going in and going out* and a *whirling round* or Circulation.

Now what Difficulty after seeing these Experiments, by which are shewn the Manner of Nature's working, to account for the Systole and Diastole of the Heart; for if the Soul is a Fire, and from whence can Heat come, but from Fire; and if its Seat is in the Blood of the Heart, as BEHMEN declares, then so long as the Soul continues therein, there must be an Attraction, Repulsion and Circulation.

MANY had imagin'd that Fire was the Cause, because they could not tell how to account for Motion without it, but then not knowing the Nature of Fire, or that there were any Properties in Nature antecedent to it, the more they attempted an Explanation, the

the more they found themselves embarrassed, till at length others resumed the Subject and attempted to explain the Systole and Diastole of the Heart from the Pressure of the Atmosphere, but with as little Success, for all proceeded on doubtful Hypotheses. But what need of Supposition now? An electrical Machine shows us the Manner of Nature's Working. It manifests the hidden and invisible Fire to our Senses. And by trying Experiments either on the vegetable or human System, we shall find the Fire, of which the Life of each consists, to be the same; for if it was a strange and heterogeneous Fire, it would exceedingly injure the human Frame and not assist it; it would not mix so kindly as it does with the Blood, but would rather cause an Ebullition in it, and do the greatest Harm to the Constitution, whereas nothing of this is seen. The only Alteration that can be perceived, is, that it acts as a Stimulus and quickens the Motion of the Blood. The Pulse beats a few Times oftener in a Minute. But the Variety of Cures that Electricity has performed, speaks more strongly and loudly for this Assertion, than all that I can possi-

bly say in Support of it. I wish I could as easily prove, to prevent the Critic's Cavil, what I am going further to advance on the Subject, viz. that the Redness of the Blood, which has puzzled so many, is caused by *Fire*. But what so probable? If all Colours are found by Experiments to be contained in Light, and if we know of no Light without Fire, to what else can we with so much Reason attribute the Redness of the Blood? A better Cause I have never yet met with, but if any one can show a better, I will readily and chearfully give up my Conjecture. But alas! how little do we know! What Reason have the wisest Men to deplore their Ignorance! What a Mystery is *Fire*! Who thinks that his Life consists in *Fire*! How unknown is Man to himself! But such we see is the Force of some Mens' Fire, that it drives them into Depths deeper than they can fathom. How many hundred Books have been written that now no one thinks worth the Perusal? How many Volumes hath a plausible Hypothesis produced, all which the next Age hath seen converted to waste Paper? An Hypothesis however pleasing, cannot stand long. Busy Imagination

tion is always at work to pull it down, and build something of its own, but not more durable, on its Ruins. But I here put an End to this Digression, if it be a Digression, and proceed to the next Chapter to show the Usefulness of Experiments.

C H A P. V.

Shows the Sentiments of Mr. BOYLE, and Dr. BOERHAAVE, respecting Mens' Ignorance of Nature, also proves that Sir ISAAC NEWTON was a Reader of BEHMEN, and borrowed from him his two Powers of Attraction and Repulsion, and concludes with the Remarks of the ingenious Dr. WATSON on Electricity.

MR. BOYLE in his Tenth Essay " of Mens' great Ignorance of the Uses of natural Things," begins his first Section with these Words: " I consider in the first Place, *That there are very few of the Works of Nature that have been sufficiently considered and are thoroughly known,* even as to those Qualities, and other Attributes of this and that Body (or other Physical Thing) which be-

long properly to it, and are not thought to be so relative to other Bodies. 'Tis not only in the Terrestrial Globe, but in almost every Body to be met with in it, that there may be a Kind of *terra incognita*, or undetected Part, whose Discovery is reserved for our future Industry."

Now this *terra incognita*, this undetected Part, no Man more industriously strove to find out, than Mr. BOYLE; he spent his Life in trying Experiments, fully convinced that they were of the last Importance to investigate Nature. Of this same Way of thinking was the great BOERHAAVE. In an Oration 1725, on the Method of obtaining Certainty in Physics, he asserts, that "we are entirely ignorant of the first Principles of Things, and that all our Knowledge of their Qualities is deriv'd either from such Experiments, as subject them to our Senses, or from Consequences by an exact Method of Reasoning deduced from those Experiments."

BUT no one was more convinced of the Utility of this Method than Sir ISAAC NEWTON. But had such Improvements in the Electrical Apparatus been made in his Days
as

as have been made in these, what would it not have enabled him to do? It would have helped him to demonstrate to the Sight, his *attractive and repulsive Powers*, and saved him the Labour of writing so much about it, and which but very few Capacities have been able to comprehend. Sir ISAAC had doubtless an uncommon Genius; but shall we say he was Self-taught with Regard to his Doctrine of *Attraction and Repulsion*? Mr. LAW knew otherwise, and was not afraid to tell the World that he had it from JACOB BEHMEN. “ The illustrious Sir ISAAC NEWTON, says he, § when he wrote his *Principia*, and published to the World his great Doctrine of *Attraction*, and those Laws of Nature by which the *Planets* began, and continue to move in their Orbits, could have told the World that the true and infallible Ground of what he there advanced, was to be found in the *Teutonic Theosopher*; in his *Three first Properties of eternal Nature*, he could have told them that he had been a diligent Reader of that wonderful Author, that he had made large Extracts out of him, and could have referred to him

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for

§ Animadversions on Dr. TRAP'S Reply, p. 314.

for the Ground of what he had observed in the Number *seven*. Now why did not this great Man do thus? Must we suppose that he was loth to have it thought, that he had been helped by any Thing that he had read? No : It is an unworthy Thought. But Sir ISAAC well knew, that Prejudice and Partiality had such Power over many People's Judgments, that Doctrines, tho' ever so deeply founded in, and proved by all the Appearances of Nature, would be suspected by some as dangerous, and condemned by others, even as false and wicked, had he made any References to an Author, that was only call'd an Ethusiast." I have not made this Extract to depreciate Sir ISAAC NEWTON: He was doubtless the *great Man*. But he certainly borrowed his attractive and repulsive Powers from BEHMEN; for had he been possessed of Instruments, as we now are, by which he could have clearly shown them, he would not have been silent; but it is too plain he was unwilling to declare from whence he had his Knowledge; whereas BEHMEN honestly and without Disguise openly declares he derived his Knowledge from GOD. And who but GOD, the Au-
thor

thor of Nature, can unfold the Laws of Nature !

Now after having mentioned Mr. BOYLE, Dr. BOERHAAVE, and Sir ISAAC NEWTON, it would be doing Injustice to my Subject not to mention the ingenious Dr. WATSON, who has written on Electricity both in the experimental and medical Way, the Result of whose Enquiries I find drawn up ready to my Hand in a Dictionary lately published under the Article of Electricity. “ Mr. WATSON’s System naturally leads him to ask, by what Denomination shall we call this extraordinary Power from its Effects in these Operations? Shall we call it Electricity from its being a Principle neither generated nor destroyed, from its being every where, and always present, and in Readiness to show itself in its Effects, tho’ latent and unobserved, ’till by some Process it is produced into Action and rendered visible from its penetrating the densest and hardest Bodies, and its uniting itself to them; and from its immense Velocity shall we with THEOPHRASTUS, BOERHAAVE, NIEUENHIT, GRAVESAND, and other Philosophers call it elementary Fire? Or shall we from its con-

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taining

taining the Substance of Light and Fire, and from the extreme Smallness of its Parts, as passing thro' most Bodies we are acquainted with, denominate it with HOMBERG and the Chymists, the chemical sulphureous Principle, which according to the Doctrine of these Gentlemen is universally disseminated? Whatever we call it; it seems certain that this Power has many surprizing Properties, and cannot but be of great Moment in the System of the Universe."—This is by far the best and most sensible Observation I have ever met with on Electricity. The *terra incognita*, or *undetected Part* so long sought for unsuccessfully by Mr. BOYLE, has fortunately been hit upon by Dr. WATSON. The Power call'd Electrical (and to which insignificant Term we are obliged to submit thro' Custom,) is indeed of the greatest Moment in the System of the Universe. This I have already demonstrated by several clear and convincing Experiments. I would only here further observe, that this Power or Principle is of a Truth every where tho' unobserved, and that it is not then generated when made visible by Experiments, any more than Fire can be said to be generated
from

from the Collision of a Flint and Steel ; for was there no Fire within them, we might strike for ever, but not produce it.

CH A P. VI.

Treats of the Number Seven, and of the frequent Mention of Fire in the Scripture, shows from whence the Fire shall come, that will cause the last Conflagration, and concludes with a serious Address to Infidels.

IN the Scripture Sense *seven* is a Number of Perfection. The frequent Mention of it in the divine Law and Revelation is doubtless allusive. In *seven Days* the Creation of the World was finished. The Leper was to be sprinkled *seven Times*, and *seven Days* were appointed for his Cleansing. *Seven Days* were appointed for consecrating the Priests, and *seven Days* for purifying the Unclean. *Seven Priests* with *seven Trumpets* blew *seven Days* for the overthrowing of the Walls of *Jericho*. *Every seventh Day* was a Sabbath. *Every seventh Year* a Year of Rest. And *seven times seven Years* brought the Jubilee.

IN

IN the Revelation, Chap. v. Ver. 6, are these Words. *And I beheld and lo in the Midst of the Throne and of the four Beasts, and in the Midst of the Elders stood a Lamb as it had been slain, having seven Horns and seven Eyes, which are the seven Spirits of GOD sent forth into all the Earth.* Mention is likewise made of *seven Candlesticks, seven Churches, seven Seals, seven Trumpets, and seven Phials.*

AND now from Experiments our Senses are convinced that there are seven Properties in Nature, all wonderful in Operation, and of such Force and Power that nothing can resist them. From the Clouds we see them burst in destructive Lightning; and it is even in our Power to arrest and collect such a Quantity that no one can approach safely to it. But from the Jars that are generally made use of, nothing hurtful can possibly happen; but even from these a Man will be convinced that there are such Powers in Nature of which he had not the least Conception.

IN the Scripture likewise frequent mention is made of *Fire* and *Light*, the one to express the *Terror* of the LORD, the other
to

to set forth his *Glory*. The first Revelation GOD made of himself, to MOSES, was by *Fire*. The *Israelites* were guided in the Night, in the Wilderness, by a Cloud of *Fire*. When the Law was given, the LORD descended upon the Mount in *Fire*. A continual *Fire* Night and Day was to be kept up in the Temple. The Holy Ghost descended upon the Apostles in the Appearance of cloven Tongues of *Fire*. PAUL going to *Damascus* to persecute the Christians was struck to the Ground by a *Light* far exceeding the Light of the Sun. Many more Passages might be mentioned, but these are sufficient to show that *Fire* is the great Agent of the Deity.

Now Experiments discover to us that *Fire* is every where and in every Thing; and that even we by the Help of Instruments can call it forth from its Hiddenness, and either make it act as a Friend or as an Enemy to the human Frame.

BUT now if we can do these Things with it, what cannot be done with it by Him, who created it? Cannot GOD make it act either as a Minister of Love, or as a Minister of Vengeance? *Sodom* and *Gomorrab* felt it
as

as a Minister of Vengeance. The three *Jews* that *Nebuchadnezzar* ordered to the burning Furnace as a Minister of Love.

NEED we now any longer spend our Time in conjecturing from whence the Fire shall come, that shall cause the last Conflagration? Some have supposed that it will come to pass by Fire from Heaven. Some that there is a central Fire, and that it will burst from thence. And others that it is more likely to happen from a fiery Comet. But all these are weak Conjectures and cannot be supported. But Experiments have now freed us from these Perplexities; they discover and manifest to our Senses such Plenty of Fire, that we know of no Place, nor any Thing in which it is not to be found. The Reason why we cannot discern it without the Help of Instruments is, because we are on the *Outside* of its *Covering*. It is covered and hidden just as the *Soul* or *Life* is covered and hidden in the Body. Now as we know of no Part of the Body in which the *Life* is not present, so an electrical Machine discovers to us that *Fire* is every where as intimately mix'd. By the Help of this Instrument we can look into the Inside of Na-
ture

ture and see the Manner of its Working. Sometimes I have been enabled to raise so much Light by it, that this Thought has struck me, " Could the Covering be removed what a glorious Shine would there be throughout the Universe !"

I CANNOT conclude this Chapter without a Word to those Persons, who over-rating their Understanding, often make themselves merry with the Credulity of Christians, who believe that this World shall be burnt and purified by Fire.—To These Faith is the Evidence of Things not seen.—To you, who have no Faith, Conclusions drawn from the silly Conjectures of weak Men, are the Ground and Support of your Unbelief. But will you believe your Senses? Will you let them determine the Point? Try Experiments! An electrical Apparatus will convince you that Fire may be collected in every Place, which Fire you will find to be the same as that, which bursts from the Clouds in Lightning, the same as that which we make use of for all the Ends and Purposes of Life. You will find too by receiving a smart Shock from a charged Jar, that there are Powers in Nature of which you
had

had not the least Idea. Now if you yourselves with the Help of proper Instruments can call forth the hidden Fire and perform Wonders with it, what shall not He do with it, who is its Creator, and who now rules and directs it? You cannot, I think, therefore after such Discoveries as these, treat Christians with Contempt for believing, what has been revealed to them in that Book, which they hold in the highest Esteem, but which you look upon as a Book of Fictions.

BUT if my Memory does not deceive me, I have read somewhere in the Philosophical Transactions, two or three Accounts of the internal Fire breaking forth in the Body and consuming it, nothing of which was left, but just enough to convince the Beholder that it was consumed by Fire. Now why may not the internal Fire of the World shake off its *Covering* in the same Manner. When GOD orders, it will do so. The Floor will then be thoroughly purged, the Chaff and Wheat will then be separated, *id est*, the Good and Bad, Believers and Unbelievers, will have a distinct Abode. One in an unquenchable Fire without Light, where the Worm dieth not. The other in a State of
Light

Light and Glory, where the *Fire* has no such consuming *destroying Power*, as we see it has here, but where it changes all Creatures into *Flames of Love*. You may conceive this from hence. Separate in your Imagination the first four Forms of Nature, in Chapter the Second, from the three last: Now in these Forms the Creature (for such as Nature is, such must be the Creatures that are in it) the Creature, I say, can feel nothing but a continual Strife of opposite Powers contending with each other. This is the miserable State into which Devils are fallen, and in which they are shut up in Chains of Darkness. Their first State of Light and Glory, which consisted of all the seven Forms of eternal Nature harmoniously working in one blessed, glorious Union, they have changed for their present dark Abode, that only consists of the opposing Forms always striving and contending with each other, and into which they can no more bring Light than the extinguished Taper can re-enlighten itself; now this horrid, this State beyond Description miserable, must be yours, if you die refusing the Light of GOD.

YOUR

YOUR Soul in her present fallen State consists of no more than the four first Forms of eternal Nature; and the Reason why you do not feel the Misery of this wretched State is, because of the Light and Water of this World with which its Anguish is allayed and asswaged; but when Death shall separate your Soul from these, then all the Wretchedness of that horrible State will be awakened in you.

You feel something of this even now under the Cover of Flesh and Blood; all the Uneasinesses that arise in your Breast, every distressing Thought, that disturbs your Quiet, and take Notice, *Discomposure* as well as *Peace* of Mind arises from within, all I say issue from the State your Soul is in; for were you in that State of Rectitude, in which you foolishly suppose yourselves, you could not have an uneasy Moment; nothing could possibly stir up the least Anxiety within you. Whatever you feel therefore not right, is a *Proof* to you of the *non-rectitude* of the State you are in. And if you cannot make that strait, which is now crooked, if you cannot alter Nature and make it better whilst in this State, you have no Certainty that it will be better in another. BUT

BUT perhaps you may be intoxicated with that vain Thought, that when we die we are annihilated. I have shewn you by the Help of an electrical Apparatus the hidden Powers of Nature and the Manner of their Working, now if these can be annihilated, then no doubt all Nature and every Creature will be annihilated, for Nature is prior to the Creature. But if this cannot be shewn or any Ways proved, such a Belief undoubtedly argues more Credulity in the Believer than ever yet existed in the weakest Christian. But do you suppose that Fire is annihilated, when you extinguish it? Cannot you raise and make it visible in the same Thing, in which it was extinguished? What a *Proof* then have you always before your Eyes of the *enduring State of Fire*, and that, when it is extinguished, it is not annihilated, but only retired under Cover, from whence it is in the Power of any one to bring it again and make it visible! When you put out your Candle the Fire becomes invisible, the Wax or Tallow is its Covering, and it lies in it in a dead inactive State; but how soon can you call it forth! As Fire therefore cannot be annihilated, and as every Life, as

has already been shewn, consists of Fire, what a Proof is this of the ever-enduring State of the Soul !

By this Time, I hope I have driven you out of your Entrenchments, and left you no Refuge but the Mercy of an all-forgiving GOD, who, tho' you reject his Revelation and will not have his Son reign over you, is yet willing that you should come to the Knowledge of the Truth and be saved. He is very loth that you should die unsaved and undelivered from the Power of Darknefs. He would, if you will suffer me to address you in a Scripture Phrase, translate you from the Kingdom of *Darknefs* into the Kingdom of his *dear Son* ; *id est*, he would send his Light into your Soul and fill it with *Joy*, *Peace*, and *Glory*. But should you vainly depend on your rational Powers ; as an extinguished Taper that cannot light itself, so will it be with your Soul. The Light that was extinguished in her by the Fall, can never be rekindled by any Power, but GOD ; but the Offer of this Union is daily and hourly made you, and will never cease to be offer'd, 'till with your last Breath you die refusing it.

OH !

OH! that I had but Words with which I could penetrate your Hearts, and make you feel the Wretchedness of your State! I have demonstrated to you that the unquenchable Fire is no Chimera. I have shewn that it exists both within and without you. I have made known to you many Experiments, from which this Truth may be deduced, and which the hardiest Infidel cannot deny. Had I only laid my Foundation on a weak Hypothesis, and raised a foolish Building upon it, as too many have done, who have contended with you, a small Part of your Artillery would have been sufficient to have demolished it; but now you may as well deny that the Sun shines at Noon-Day, as that *Fire* is not every where and in every Thing. Too many who have entered the Lists with you, have had no firmer Ground to stand upon than yourselves; this is the Reason, that hitherto, tho' not Conquerors, you have shouted *Victory*. But I hope for the future no Christians will be so weak as to contend with you about Words, which the Wit of Man tortures as it pleases. Nothing has hurt both you and the Cause of Christianity so much as this. I find the

Saviour of the World disputing with no Man. When he delivered his great Truths and unheard of Doctrines, he only added, *He that hath Ears to hear let him hear.* Disputes, I am persuaded, do harm to the Contenders. Few enter the Field without being worsted. Bitterness is awakened in the conquered, and Pride lays hold on the Victor.

C H A P. VII.

Shews that Electricity comes the nearest to a Panacæa of any Medicine yet discovered, explains the electrical Shock, and describes a Planetarium, that beautifully shews the Revolutions of the Planets.

IMAGINATION has deceived many with the Thought that there is in Nature a Panacæa, but hitherto it has been searched after without Success. Electricity bids the fairest for it of any Medicine yet discovered. No one can positively say what it will not cure: And yet I am not such an Enthusiast as to imagine that it will remove every Disorder

order incident to the human Body. But the many Disorders I have seen it cure, if it has not gain'd my Belief in it as a Panacæa, yet has amazed and astonished me beyond Expression.

IF it be allowed that our Disorders arise from Obstructions, nothing was ever found out so innocent, and yet so powerful to remove them. From hence may be accounted why it has instantaneously cured Disorders of long standing, and from which the Patient has suffered most excruciating Pain.

BUT perhaps an Objection may here be made, that I call that innocent in this Place, which in another I have said may be hurtful. That no Medicine of such surprizing Efficacy was ever discovered, and of so innocent a Nature, I have for many Years experienced, and therefore can speak with Certainty. Hurtfulness I never saw issue from it, but that it may be made hurtful, I have not the least doubt. A large Quantity collected once by Mr. FRANKLIN, as he was trying Experiments, burst unawares from the Jars and struck him to the Ground. The same Quantity doubled would doubtless have killed him.

BUT from an Apparatus calculated for medical Purposes, I mean where the Jar or Bottle made Use of contains no more than *two Quarts*, it is impossible to receive the least Injury, even from the Hands of the most ignorant.

I HAVE often in trying Experiments received many very severe Shocks, but never perceived the least Hurt; nay I have sometimes found myself better and more lively.

STRANGE Objections have indeed been made to Electricity, nay and what is more strange, by Persons, who never saw a Machine. But *Truth* gains Ground slowly, the Reason is, it has *Ignorance* and *Prejudice* to combat in the Way.

I WILL now attempt to explain what causes the Shock or that Stroke, which we feel when electrified.

By Experiments the First and Second, Chapter the Second, the Eye has clear Proof that there are in Nature two Powers diametrically opposite to each other; these Powers never cease working after this Manner, but the Opposition brings forth another Motion, viz. a whirling round; now whoever comes within the Circle made by a Chain or Wire,
between

between the Bottom and Top of a charged Jar, will feel a Shock or Stroke as if a Stander-by had struck him. This Stroke manifestly comes to pass from the two contending Powers; for passing contrary Ways with such sudden Swiftnefs and Power thro' the Body, they distend the Vessels; which sudden and quick Distention causes the Sensation so much like an unexpected Blow. But small Animals, kill'd by Electricity, shew this beyond Contradiction. Their Vessels, being too tender to bear the Power of the Shock, immediately burst.

I WILL not conclude this Chapter, without first imparting the Invention of a Planetarium, that curiously shews the Motions of the Planets.

I HAVE a round Table, the Diameter of which is near three Feet, the height twenty Inches; on the Middle of this Table, I place a round well polished Plate of Pewter, of the Diameter of eighteen Inches; on this Plate I place six Orbits of Brass, but fastened to one another, and in such a Manner, that six Glass Balls, of about three Quarters of an Inch Diameter, can easily run between the Orbits. Under the Edge of the Outside

Orbit, I put four Supporters of Sealing-Wax, to raise the Orbits above the Pewter Plate, so that the Glass Balls may just touch the inside Edges of the Orbits, and may have nothing to hinder their revolving. Over the Orbits, about the Distance of two Feet, I suspend a Copper Globe gilded, of about nine Inches Diameter, to represent the Sun, from this I fasten to one of the Orbits a Wire, as small as an Hair, then by Means of another small Wire, reaching from the Conductor to the gilded Globe, I communicate the Fire to it; from the Globe it passes by the Wire to the Orbits, and from the Orbits to the Balls, which being caught between the contending Powers are put in Motion and driven round swiftly between the Orbits. But at the same Time that they run between the Orbits, they also revolve on their Axis, so that two Motions are communicated to them; and besides this, one half of the Balls is illuminated.

BUT could the Machine in this Experiment be kept out of Sight, the Beholders would be greatly astonished; but whilst they see the Apparatus, they are apt to conclude, that that is the Cause, whereas the Machine

is only instrumental. The hidden Powers of Nature are the Cause, which are clearly shewn by this Experiment, and made more easy to be comprehended. For here a Man will naturally ask himself, what is the *Power* that puts the Balls in Motion, and what is the *Light* that illuminates them?

BUT I must here give a Caution to inform the Reader, if he has an Inclination to try this curious Experiment, that unless he warms the Pewter-plate, before he begins, his Labour will be in vain. The want of knowing this, cost me much fruitless Trouble. Some Persons, from making one and sometimes two Balls revolve, had positively, but erroneously asserted, that they could make many; but I found no such Thing; and others, who attempted to make more revolve, have candidly confessed to me their Inability. At first I thought it was owing to the Want of more Fire, or that *this* was wrong, or *that* not right, 'till at last warming the Plate, I succeeded according to my Wish.

THE Glass Balls I found condensed the Air upon their Surface, and became moist, by which Means the Fire escaped; but

when the Plate was warmed, this counteracted the condensing Power of the Glass, and then the Balls revolved with very little Fire. But Care must be taken, that the Balls are not heavier in one Part than in another.

HAVING now shewn by Means of a simple Instrument, unmeaningly called an electrical Machine, how the hidden, but wonderful Powers of Nature, may be made visible to the Senses, I will relate a few Cures, selected out of many, as a corroborative Proof, that we are now arrived at the Knowledge of those Arcana, that many have searched after, but for want of proper Instruments, could not discover.

C H A P. VIII.

Contains several and various Cures performed by Electricity, viz. 1. Hysterick Fits. 2. Hemiplegia. 3. Tertian Ague. 4. Swelled Arm from Bleeding. 5. Loss of Sight. 6. Pains and Swellings. 7. Wrenched Knee. 8. White Swelling. 9. Scalds and Burns. 10. Erysipelas. 11. Weakness and Loss of Strength from Lying-in. 12. Rheumatic Pains. 13. Decay of Sight. 14. Sciatic. 15. Violent Contusion from a Fall. 16. Tertian Ague. 17. Numbness. 18. Rheumatic Pains. 19. Distorted Hand. 20. Loss of Limbs after Lying-in. 21. Pain in the Back caused by frequent Miscarriages.

MY Servant Ch*** P**** had many Years been afflicted with Hysterick Fits. In 1761 I sent her an Out-Patient to the Infirmary, which she attended several Months, but to Appearance without the least good Effect. Her Fits encreased and her Constitution seemed much weakened. At last I proposed Electricity to her. She received several Shocks, but not the least good

good or ill Effect could be perceived from them. Thinking with myself that I might have given the Shocks at an improper Season, I changed the Time, and gave them to her when the Fit was upon her. The Effect was astonishing. The Fit ceased. The Convulsions were quieted, and she was enabled in five Minutes to go about her usual Work; whereas when the Fit was left to itself, it weakened her so much, that it was sometimes near two Days before she recovered that little Strength, that the Fits had left her. I pursued this Method. Her Fits gradually lessened, and at length ceased. But I must here inform the Reader, that in the Spring 1762 I advised her to use the cold Bath, which did her much good. This she has continued every Summer since, and at the writing this, *December 24, 1764*, she continues in perfect Health, and has had, from her own Account, but six Fits, and those chiefly from Surprise, since she left off the Use of Electricity, which was from the Time of her first using the Cold-Bath.—

I passed the Shocks through the Heart, and from the Right Shoulder to the Left Side, and then from the Left Shoulder to the
Right

Right Side. When she was much convulsed I passed the Shock from the Left Hand to the Right Foot, and then from the Right Hand to the Left Foot.

CURE II.

JOSEPH BURGESS, aged 22, applied to me in *February*, 1761. Two Years before, returning from Sea, he was impressed into the King's Service, in the *Bristol* Channel, and with several others was sent to navigate a Prize round to *Plymouth*. He had not been long on board, before he was struck with an Hemiplegia on the Right Side. When the Vessel arrived at *Plymouth*, he was sent to the Hospital. He continued there, his Mother informed me, three Months, without receiving the least Benefit. She then removed him to *Bristol*, and by the Help of Friends got him admitted into the Hospital at *Bath*, where he remained seven Months, but to no Purpose. She then removed him back to *Bristol*, and got him admitted into the Infirmary, where he continued three Months, and was then dismissed as one incurable. Some Time after this his Mother applied to me; at this Crisis his Right Leg

was

was almost useless, he had no Strength to lift it up, he could only drag it after the Left. His Right Arm was withered, and seemed only to hang to his Shoulder, and his Fingers were fast clenched and quite inflexible. Neither was he able to speak one articulate Word.

I GAVE him thirty or forty smart Shocks for several Mornings, and had soon sufficient Reason to think that I should be of Service to him ; for the Parts, which were at first insensible, began to recover their Feeling, his Fingers unclenched a little, and looked of a living Colour. In two Months his Leg recovered so much Strength that he could walk with Freedom ; and I could perceive the Flesh of his Arm grow and increase apace ; by this Time he could lift it to his Head and move his Fingers. I ordered him to use his Arm as much as he could, and his Mother telling me he could pump with it, I directed him to exercise his Arm this Way as much as possible. In a little Time he recovered so much Strength that he was able to pump for half an Hour. He attended three Months, and then of his own Accord left me. His Flesh became sensible,

fenfible, and the Shocks gave him Pain. This was the Reason of his coming no more.

I HEARD of his going to work soon after, and that Mr. HILL had taken him into his Brick-Yard; but I faw no more of him after he left me, 'till the Day of my writing this Account, *February* 4th, 1766, when I took a Walk to Mr. HILL's Yard in St. *Philip's*, in hopes I fhould find him at Work. I met with one of Mr. HILL's Clerks, who told me he was then at work with feveral other Men digging and wheeling of Clay, and was fo kind as to go with me and point him out. I flood at a Distance fome Time, to obferve how he managed his Barrow, which he feemed to drive as quick as any of the reft, only I perceived he limped a little. I then went to him, and examined how he managed his Barrow. I found his Fingers ftill much contracted and very ftiff, but with the Help of a Strap round his Wrist, in which he made a Loop to put the Handle of the Barrow, he feemed to drive it before him with great Eafe. At this Time he earned four Shillings per Week, but in the Summer Five. And I was told that he was an honeft, laborious, induftrious Fellow. So
that

that now, instead of being to his Parents or the Parish an heavy Burthen, he had for five Years maintained himself. Before he left me he was able to speak yes and no very articulately; and his Mother this Day told me, that he could speak several Words very clear and distinct. Had he continued the Use of Electricity, I make no doubt but he would have been perfectly cured.—I often passed the Shock through his Tongue.

CURE III.

IN *January* 1761, I was applied to, for two Children (Sons of Mr. CHANCELLOR, Taylor, in the Parish of *St. Philip and Jacob*, the eldest nine Years old, the other five) to electrify them on Account of a Tertian Ague, which had stubbornly resisted all Application. I order'd the Children to be brought to me just as the Ague was coming upon them; Experience having taught me that this is the only Time to give the Shock with Efficacy.

THEY were electrified only twice, and were perfectly cured, by passing thro' them four slight Shocks, two through the Stomach and two through the Sides.

IN the *March* following one of the Children fell into the Water, and his Ague returned. He was brought to me again, but then the electrical Shock had not the least Effect.

CURE IV.

WILLIAM ROWE, Second-Mate of the *Gloucestershire*, aged about 40; in his Return from *Jamaica* was bled in his Arm, and from what ensued, seemed to have received an Injury from the Lancet, for his Arm between the Elbow and Shoulder immediately swelled, and gave him so much Pain, that he had scarce any Sleep for six Weeks. When he arrived at *Bristol*, Poulitices and every necessary Remedy were applied, but the poor Man did not find the least Benefit; his Pain continued and prevented his Sleeping.

HE came to me *July* 6, 1761, he was then in great Misery. The Swelling was very large, and so hard that I could not make the least Impression on it with my Finger. His Hand was withering, and the whole Arm was so weak that he was obliged to rest it in a Sling, and button his Coat

F

loose

loose over it, for he had not been able for some Time to put it into the Sleeve.

I GAVE him between thirty and forty Shocks the first Time. The Night following he slept better than he had done from the Time of Bleeding, and said that the Pain was nigh taken off. I perceived the Swelling to be abated one third. I gave him the same Number of Shocks as I did the Day before; and, to my great Astonishment, when he went from the Machine, he took his Sling, which was a Silk Handkerchief, from his Neck, and put on his Coat with as much Ease as I could my own. He was perfectly cured in about three Weeks. I passed the Shocks chiefly thro' the Swelling, and from the Shoulder down to the Hand.

C U R E V.

IN *January* 1762, a poor Woman, whose Name is BETTY BUTLER, aged about thirty, came begging to my Door. She was almost blind. On Enquiry I found her Blindness was caused by a Blow with a Potatoe; about two Years and an half before. The Potatoe was flung with great Force, and struck her
in

In the Right Eye, with which she never remembered to have seen, owing to an Injury she received in her Infancy. But the left Eye, 'till that Accident, was always strong. An Inflammation immediately ensued; and when she came to me, the Right Eye was much swelled, and protuberated out of the Socket. The Anguish was very great, and so affected the Left Eye, that she had no more Sight left than just sufficient to go about to beg.

I took her to my Machine and drew some Sparks from both her Eyes, she seemed better before she quitted the Room, but by next Morning was considerably so. She told me she slept well all Night, which was what she had not done for some Time before, her Eye seeming to her always full of Sand, which prevented her Sleeping. After drawing Sparks from her Eyes, about ten Minutes at a Time, for four Mornings, she so far recovered her Sight, that she could see to sew a whole Day together. In about five Weeks I dismissed her as perfectly cured.

BUT the following Spring she came to me; begging a Note to the Infirmary, telling me she wanted to take Physic, that it

was always her Custom every Spring. Her Eye was then perfectly well. I gave her a Note for an Out-Patient. She took Physic, but caught cold, on which she was seized with a violent Pain in her Head, which affected her Eye. She then applied to me a second Time. I treated her in the same Manner I did at first: But now it was to no Purpose. I then passed a Shock thro' her Head, but neither Spark nor Shock now seemed to have the least Effect. She was then taken into the Infirmary. She soon recovered of her Head-Ach, but her Eye grew worse under all that was applied to it. She begg'd her Dismission, and came to me. I then drew Sparks from her Eye the third Time, and it had the same Efficacy it had at first. She attended about ten Days, and has never had any Complaint in her Eye since.——*N. B.* The Time she was seized with the Head-Ach, was the Time the Influenza prevailed.

C U R E VI.

JOHN MEREDITH, a Journeyman Shoemaker, was rendered incapable of working from Swellings and great Pain in his Arm
and

and Leg. A Lady who saw him weeping over his Misfortunes, having many Mouths to feed, and no Strength to get any Thing for them, directed him to me; accordingly he came in *January*, 1762. I passed a few Shocks thro' the Swellings and the Places where he felt any Pain. In a few Days he was able to work, and in a Month was dismissed perfectly cured. I have met him several Times since, and he has told me he was very well.

CURE VII.

JOHN PAGLAR, Mason, being at work in *Redcliff-street*, *March* 1762, had the Misfortune, by carrying a Stone too heavy, to wrench his Knee; it swelled immediately, and was very painful notwithstanding it was instantly chafed with Spirits of Wine. He applied that Night to a Surgeon, who told him, he imagined it would be some Time before it could be cured. The next Morning he came to me, but with great Difficulty and much Pain. I passed about five Shocks thro' the Swelling, this enabled him to bend his Knee and walk about the Room without Difficulty. I ordered him to favour

his Knee that Day as much as he could, and come to me next Morning. He came, but perfectly cured with what was already done. The Swelling was gone, he could bend his Knee and walk as well as he could before the Accident happened. I saw him several Years after, and he told me his Knee had continued well ever since.

CURE VIII.

THE afore-mentioned Patient, overjoyed at his quick and unexpected Recovery, told many People as he went from my House what had befallen him, and how he was cured. The News reached Mrs. PRICE, Wife of Mr. PRICE, Blacksmith, in *Limekiln-Lane*, who was then confined to her Room by what an Apothecary, who was sent by a Lady in the Neighbourhood to look at it, called a White-Swelling; and judged too of a dangerous Nature. The poor Woman, stirred up by what the above Patient had related, begged her Neighbours to assist in conveying her to my House. She was accordingly brought in a Chair, for she had not the least Use of her Leg. I passed several Shocks through the Swelling, and

and from the Knee down to the Foot. Her Pain, which was very great, was soon taken away, and in about a Month she was able, by the Help of a Crutch and Stick, to walk to my House. She was perfectly cured in three Months. I saw her several Times after, and she seemed to walk without the least Difficulty. But about two Years ago she called at my House to thank me, and then told me, she had walked the Day before ten Miles, and that she had not found the least Swelling in her Knee from the Time I dismissed her.

CURE IX.

IN the Beginning of *March*, 1763, my Cook-Maid S*** W***, had the Misfortune to scald her Arm from the Wrist to the Elbow. I was not informed of it 'till two Hours after the Accident. When I saw her Arm, there was one very large Blister already risen, and several small ones were rising all over the scalded Part. I drew Sparks from every Part of the Scald, for about the Space of five Minutes. She was much easier and able to go to the Fire and do her Work. In the Evening I repeated

the drawing of Sparks from her Arm about ten Minutes. By next Morning all was quite healed; there was not the least Appearance of a Blister, nor could the least dead or shrivelled Skin be seen, but where the large Blister had risen. She said her Arm was quite easy, and the same as if it had not been scalded.

I discovered that drawing Sparks would cure Burns or Scalds from my little Boy, who before he could well speak, had the Misfortune to thrust his Arm against an Ironing-Box in the Landry. The Child cried much, but was averse to have any Thing put to it. I said I would electrify him, this he consented to, for he was fond of seeing the Machine. I drew a few Sparks from the Burn and heard no more of it. This convinced me; but he soon after afforded me another Proof. Standing by the Fire unobserved, he put a little Cane into it, and then drew it thro' his Hand, the Middle of which appeared much burnt. I drew Sparks from it, and the next Morning it was quite well.

C U R E X.

APRIL 2, 1763, my Wife walk'd too long, as appeared by the Consequence, in the Evening in the Garden. Next Morning an Erysipelas appeared in her Face. Her Chin was swelled, inflamed and full of small Pustules. By Night the Swelling had reached her Right Cheek, and was proceeding to her Neck and Forehead. Her Right Eye seemed to be closing up, and her whole Face was very sore and painful; she found also a Sickness at her Stomach. She asked, if I did not think drawing Sparks from her Face would be of Service to her? I drew Sparks from it for about ten Minutes. The Inflammation instantly stopped, the Sickness went off from her Stomach, and the Soreness was much abated. She could bear now to press and rub it. Next Morning all her Face and Head was a little swelled; but drawing Sparks about five Minutes at a Time, Night and Morning for five Days, perfectly cured her. She has never had the least Appearance of an Erysipelas since.

C U R E X I.

ABOUT this Time MARY SCRIVEN, the Wife of a labouring Man at *Henbury*, in *Gloucestershire*, applied to me. Her Complaint was a fixed Pain in both her Arms, which had deprived her of the Use of them. The Flesh of both was much wasted. One of them she could not move from her Side, and the Pain was so great that she had no rest Night nor Day. Her Appetite too was quite taken away by it.

By passing about twenty Shocks for a few Mornings thro' the Parts where she felt any Pain, it was so far taken off that she began to have good Nights, and her Appetite mended daily. In less than a Month she was able to raise her Hands to her Head, and under-hand she could lift a Pail of Water as high as her Knees, do many Necessaries about her House, and dress her young Child, which was her seventh living, and in lying-in with which her Disorder came upon her. In two Months the Flesh of her Arms recovered its Colour and looked healthy, and visibly filled up and encreased apace. She came to me at Times for six Months, staying

ing away at Intervals a Fortnight, and some times three Weeks.

I WILL not say she was absolutely cured by Electricity. Her Disorder was of the relaxed Kind. She could do any Thing under but not over-hand. I advised her to try the Effect of pumping cold Spring-Water upon her Arms and Hands. It did good. But fortunately a Neighbour advised herto flake a Lime-stone in Water, and wash her Arms and Hands with it. This effected a perfect Cure. And the last Time I saw her, which was above two Years after, she told me she was so well that she had stood the Week before five Days to washing.

C U R E XII.

MARY BARTER, a Nurse, applied to me likewise about this Time. By sitting up, and catching frequent Colds, she had lost the Use of one Arm, and yet she had had all the Assistance Physicians and Apothecaries could give her. A few Shocks took off her Pain and in six Weeks she was perfectly cured. But in about a Year and an Half after, from repeated Colds, her Pain returned again, but not so violent. In three Weeks

Weeks she was dismissed a second Time as perfectly cured. In about five Years after she applied to me a third Time. The Pain had then shifted to her Knee and Leg. She was treated in the same Manner, and the same good Effect followed. She has none of these Complaints now in the Beginning of the Year 1771.

C U R E XIII.

IN the Spring of the Year 1763, a Lady was much perswaded to try the Effect of Electricity for her Sight. It had been gradually decaying for some Time. A Film could be perceived gathering over the Iris, and making its Way to cover the Pupil. One Eye in particular was so darkened that she could not see with it either to read or thread a Needle.

I DREW Sparks from her Eyes about the Space of three or four Minutes every Morning for a Fortnight. She found her Eyes surprizingly mended; and those who stood by could see as it were the Curtain draw back from the Pupil and Iris. She attended afterwards at Times six Weeks longer, and when she left me was able to thread the
finest

finest Needle, and to read the smallest Print.

C U R E XIV.

THOMAS FRANKLAND, an Invalid, but discharged on Account of what was thought an incurable Malady, was seized with a violent and most excruciating Pain in the upper Part of his Thigh. It had tormented him for three Months before he came to me, and had rendered his Life perfectly miserable, depriving him of all Rest Night and Day. He was cured by electrifying him only twice. I passed about six Shocks thro' the Pain. This poor Fellow's Gratitude was so great that, at whatever Distance he saw me, he would always run and be ready to throw himself at my Feet. I have not seen him now for several Years.

C U R E XV.

JANUARY 20, 1764, my Man J. T. had the Misfortune to fall down some Steps and to receive from the Edge of one of them a violent Contusion in the Small of his Back. Scarce any Sign appeared outwardly, but his Left Leg was struck useless. I immediately passed a few Shocks through the Bruise.

Bruise. Other Things thro' Fear were applied, but Electricity seemed to do the most Good: Accordingly all other Applications were discontinued. In a Fortnight he was able to wait at Table, and do many other Things in his Business, and in three Weeks was cured.

CURE XVI.

MARCH 27, 1764, walking a little Way from my House, and looking on a poor Man digging Stones, he suddenly dropped his Tool, and cried out, I can't work, I must go home. His Soliloquy naturally led me to enquire, why? Sir, replied the poor Man, I have had a third Day's Ague for these six Weeks, and now I feel it coming upon me. I took him immediately to my Machine, and passed four Shocks through him cross-ways. Two from the Right Hand to the Left Foot, and two from the Left Hand to the Right Foot. I saw no more of him 'till *April* 9 following. When he told me he never had the Ague but once after, and that only for three Minutes, that he was then well and hearty, and his Stomach scarce ever satisfied with eating. His Name

is WILLIAM CARTER, his Age Sixty, and hethen lived in *Pile-street*.

CURE XVII.

MRS. H. Wife of Mr. H. in *Pipe-Lane*, for five Years had been so afflicted with acute Pains in her Left Leg and Right Arm; that her Life was rendered quite miserable. Her Leg was so benumbed that it had lost its Feeling.

WHEN she was brought to me, *May 6*, 1765, she was so weak that it was with Difficulty she was kept from fainting, but notwithstanding she was thus reduced, in five Days by the Help of two Persons she was able to walk to my House. The Shocks removed her Pains almost immediately, and the second Day of her Attendance the Numbness was taken off, and she began to perceive a Feeling in her Leg. After attending nineteen Times she was dismissed perfectly cured.

CURE XVIII.

JACOB GRIFFITH, a Seafaring Man, applied to me *May 21*, 1765, to electrify him for Pains and Swellings in his Legs and Arms. He told me that he had been discharged

charged from the *Hope* Man of War as incapable of Service, and that he had been likewise dismissed from *Portsmouth* Hospital as incurable. He was cured by Shocks, attending only four Days.

C U R E XIX.

S. W***M, in the Year 1762, whilst in Service in *London*, had the Misfortune to cut her Hand with a Tin-Box, as she was making Pomatum. She thought the Wound trifling, but in a Day or two it grew painful. An eminent Surgeon dressed it. It grew worse; and at last became so bad, that a Consultation was held how to proceed. The Result was; to save Life she must lose her Hand. When the poor Creature heard this, she begged with many Tears and Intreaties that her Hand, if possible, might be saved, having no other Way, but Servitude, to get her Bread. Trial was made, and it so far succeeded that the Wounds were healed up. In the Summer 1765, she came with a Family to *Bristol*, going to *Nevis*. Here she was directed to me. I do not remember ever to have seen an Hand so distorted. It was much wasted, as was likewise her Arm. She

She was always in Pain, and her Fingers and Hand had totally lost all Feeling. Her Hand was so extreamly weak that she could not lift a Pound Weight with it.

HAVING never had a Case similar to this, I could not give her much Encouragement. I could only say that no one could positively declare what Electricity would not cure; broken Bones excepted.

HER Feeling was so lost that at first she did not perceive the Shocks in her Hand, tho' I gave her several very smart ones. The fourth Morning she began to feel, this encouraged me. And she herself was so sensible of Relief, that she quitted her Place, in order that nothing might hinder her Attendance. In ten Mornings there was a manifest Appearance for the better. Her Pain was taken off, and her Arm and Hand were so strengthened that she could lift a Chair. After this her Joints began to appear, and her Fingers to be flexible; for before there was no Bending in her Fingers, nor a Knuckle to be seen.—She told me she could feel the finest Needle, and use it with Ease. The Shape of her Hand was much altered for the better.

CURE XX.

IN *February* 1765, my Wife, after Lying-in, was seized with an almost total Loss of the Use of her Limbs. Not a Joint was free from excruciating Pain, which so deprived her of Rest that her Intellects were affected. She appeared so bad that Blisters were judged needful. Accordingly two were applied to the Small of her Legs. When she was able to sit up in the Bed, she begg'd I would electrify her. Her Knees swelled, her Ancles spread, and not a Joint in her Hands but what was enlarging. The Effect of the Shock was surprizing, it reduced the Swellings, took off her Pains and caused her to have good Nights. But what is remarkable, such a Deadness fell on the Places where the Blisters were put, that for a long Time she had not the least Feeling in the Small of her Legs; and I believe never will have the Feeling there she had before. I have the greatest Reason to believe that Electricity, under GOD, preserved her Life; for besides what I have mentioned, there were strong Symptoms of a Dropsy. I passed the Shocks thro' her Pains, and sometimes

times shocked her whole Frame, giving the Shock from Hand to Foot. These Shocks, she said, did her most Good. She recovered. But a Weakness has continued ever since in her Legs and Ancles. A Cramp teaz'd her for a long Time after, but Electrifying always relieved her. It still at Times catches her, but not so violently.

Doubtful CURE XXI.

THIS Case ought to be, and would have been the first, could I have spoken with Certainty of it, it is only introduced here for its Peculiarity.

IN *September 1760*, Mrs. EVANS, Wife of Mr. EVANS, Corn-Chandler, in *St. Maryport-street*, desired me to electrify her. Her Complaint was a fixed and sharp Pain in the Small of her Back, caused, as she apprehended, by frequent Miscarriages. No Cost had been spared to obtain a Cure. The ablest Physicians had been consulted, and the Bath had been tried.

WHEN she came to me, she declared she had not lain down in her Bed for a Twelve-month, but was oblig'd to be bolstered up; and if at any Time she fell in her Sleep on

one Side, she was awakened with a Pain, as if Needles were piercing her.

I passed four Shocks thro' the Place where the Pain was fixed. The next Morning she came to me full of Spirits, telling me she had lain down in her Bed, and had slept soundly till four o'Clock, and that the Pain was almost gone. I passed four Shocks more thro' the Pain, and she felt no more of it then. But taking too great Liberty with her new-acquired Strength, and lifting something too heavy for her, her Pain returned, but not with Violence. A few Shocks removed it.

SHE had at this Time an Asthmatic Complaint, and begged as electrifying had removed her Pain, that I would try if it would help her Breath. I passed two Shocks thro' her Stomach, and two Crossways from her Shoulders to her Sides. She said she was better. What further Effect it had I know not, for I never saw her after. I heard she went Abroad.

CURE XXII.

THE following remarkable Cure, not by myself, but by a Friend, who particularly desired

desired that I would insert it in my List, is here introduced with sanguine Hopes, that others would make Trial of Electricity in the same Case, being throughly perswaded that the Remedy will be found, if not effectual, yet most certainly innocent. The Short of the Relation is this. A young Gentleman fond of Electricity went to his Tinman's for something he had bespoke of him, who at that Crisis was thought to be dying of the Gout in his Stomach. He was desired to go up Stairs; as soon as the poor Man saw him, Sir, says he, for GOD Sake electrify me. The Machine was brought and several Shocks were given through the Stomach, where the Pain was felt. The Patient every Time begg'd that the Shocks might be stronger; at last a great Quantity of Wind came up, and he immediately cried out, "I am better." That Night he rested tolerably well. The Gout almost instantly shifted from his Stomach to his Feet. But next Day making too free with himself, and drinking some Ale, the Gout returned to his Stomach. The Shocks were repeated, and the Patient's Account was, "I feel the Gout retire to my Feet." He was cured.—

Some

Some Years after I saw him, conversed with him, and heard the above Particulars from him.

I could produce many more Cures, sufficient to make a Volume of no small Size; but as I only write for Information, Prolixity has been studiously avoided by me, that the Reader might not be tired.

THE Account of the Cures therefore have been shortened as much as the Nature of them would admit. And those have been chiefly mentioned, that were the most singular, as a further and corroborative Proof of what has been before advanced, relative to the *secret and hidden Powers of Nature*.

Magna est Veritas & prævalebit.

P. S. I have not said any Thing concerning the Manner of giving the *Shock*, and drawing the *Spark*, knowing how difficult it is to convey by Words the Method of a manual Operation. I ground this on the Complaints of many, who have bought Machines, “That in giving the *Shock*, they either give it improperly to the Patient or shock themselves, notwithstanding they have
care-

carefully attended to the Instructions given by Writers on the Subject."

I would therefore advise ocular Information, more may be learned from seeing an electrical Operation, than from Volumes on the Subject.

T H E E N D.



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RECEIVED



A
 CANDID ENQUIRY
 INTO
 THE MERITS
 OF
 Doctor *Cadogan's* Dissertation
 ON THE
 G O U T.
 IN WHICH

The cause of the disease—the method of cure—the consistency of opinion—the energy of argument—the conclusiveness of reasoning—the aptness of illustration—the perspicuity of style—the ingenuity of the undertaking—the conspicuousness of novelty—and the certainty of errors, which are contained in that popular performance, are fully considered, and fairly exposed to view.

WITH
 A N A P P E N D I X,

In which is Contained

A certain Cure for the Gout, &c.

- - - - collegia, Pharmacopolæ,
Medici, - - - - hoc genus omne
 Mœstum ac sollicitum est.

HOR.

I would decry all Quacks, from *Æsculapius* to the present, either as ignorant Fools, or self-convicted Impostors, advertising daily Lyes, whether mounted on Stages, or riding in Chariots.

CADOGAN'S DISSERT.

THE SECOND EDITION.

By JOHN SHEBBEARE, M. D.

L O N D O N :

PRINTED FOR S. HOOPER, No 25, LUDGATE-HILL.
 M.DCC.LXXIII,

INTRODUCTION.

THERE is a passion in the soul which, in its various operations on the human conduct, is productive of ends that are extremely dissimilar: and this is envy. By the energy of this emotion some individuals are stimulated to the emulation of those laudable pursuits which they observe in men of distinguished superiority; whilst others, goaded by the like sensation, employ their lives in depreciating the excellences of those whom they cannot equal, and will not imitate. The former is the legitimate offspring of a candid and ingenuous mind; the latter of a mean and sordid. And those, who indulge themselves in the exercise of this malignant disposition, are not only the enemies of the meritorious, but of all the human race, who are made happier by the toil, study and exhibitions of exalted genius. The truth of this observation, respecting the malevolence of man, hath been seldom more conspicuously exemplified than in the violent

and unmerited attacks which have been, and are continually made by the physical fraternity on the unprecedented, unparalell'd and inimitable dissertation on the gout, written by Dr. William Cadogan. And all this venomous persecution seems to have been engendered, from no other earthly cause, than because that *liberal* practitioner, animated by the desire of imparting health and longevity to his fellow-creatures of the same species, hath most disinterestedly endeavoured to expose the absurd doctrines of the ancient Greek, Latin, Arabic, and of modern physicians, and to explode the folly of following the prescriptions of any of the faculty, himself excepted: as if there could be the least imputation, of his acting from the sordid motives of self-interest, in thus uniting the *utile* of the public with the *dulce* of himself. More particularly, as the former seems impracticable to be obtained, but in conjunction with the latter. The physical faculty, of all ranks, the regulars, semiregulars, and intruders, under all denominations, have delighted in girding at him; and taken upon them to assert, that his book contains a multiplicity of errors, which may prove fatal to mankind, should his doctrines prevail. And because Dr. Cadogan hath said, in speaking of his subject, "that the task seems to have been left for him," and thereby suggested to the world, that this manner of treating chronical diseases is intirely new and original, his enemies have

not

not abstained from malediction; but have asserted, that there is nothing either right, new, original, ingenious, or of public utility contained in his dissertation. And thus, with a view to oppose an assumption which may, not improbably, have been rather too prompt in Dr. Cadogan, they run into an opposite extreme, which is equally reprehensible.

As to the errors of Dr. Cadogan, although error be the lot of all mankind; yet is there an essential difference in the nature of them. And in order to explain what I think of those in the doctor's dissertation, I shall take the liberty of quoting his opinion; and speak of *him* as he does of the ancient philosophers; that some of them were very *ingenious* in guessing *wrong*. And, as I have taken that idea to express my own, respecting Dr. Cadogan's *errors*, I humbly request, that it may be permitted to express my conception of his *ingenuity* also.

As to the hasty charge that his dissertation contains nothing new, nor original, nor any thing but what has been repeatedly said, and great part of it for ages before he was born, that charge, indeed, I am in no doubt of refuting. And I will renounce, for evermore, the use of pen, ink and paper, if I do not prove, that this his work does actually include a variety of new things; such as not only have never yet been given; but such also, as, in all probability, would never have been commu-

nicated to bless mankind, had Dr. Cadogan withheld his bounty from them. To delineate my idea of public utility in this instance would be altogether useless; for, in a kingdom where depopulation is so rapidly increasing, what can be more conducive to the national prosperity, than a certain method of preserving health and long life to the inhabitants; and what individual can be so valuable a subject, as he who accomplishes it.

It has been remarked, as an error too common in philosophers and men of genius, that they do not previously settle the ideas which they annex to the terms they make use of in their lucubrations. On this account, I think it necessary to explain my ideas of newness and originality, as they are to be received and considered in this my candid enquiry.

Various are the ways in which the works of the learned, in the medical science, may be considered as new and original. They may be so deemed in the matter which they contain.-- In the manner in which they are delivered.-- In the cause of the disease.-- In the method of the cure.-- In the consistency of opinion.-- The energy of the arguments.-- The conclusiveness of the reasoning.-- The aptitude of the illustrations.-- The perspicuity of the style, and in the marks of no common practitioner. All these may be new and original, although they have been previously said, by five-hundred writers, printed five-hundred times, in
five-

five-hundred years, to any philosophical physician, who hath never read the works in which they are contained.—They may be new also if having read these works he hath entirely forgotten them.—And it will be no less new and original, if such a person, after having read and remembered these works, should say, the task of discovering what they exhibit seems to be left to him. Under one or more of these heads, I am not in the least diffident of proving, to the conviction of the most inveterate of Dr. Cadogan's enemies, that this his dissertation is fraught with great newness and originality. And in this place I must beg leave to observe, that although I come forth to the world behind the dissertation, that I do not intend to be considered as Jack Rugby following close at the heel of Dr. Caius; nor as Falstaffe's page walking before him; for Dr. Cadogan is not a man who desires to be hidden. But as an Herald, who with sound of trumpet, proclaims, to all the world, the approach of some great personage: or rather, to bring the matter to a more familiar image, according to what is described in the following story. There lived in Paris *no common* practitioner in physic who had a son, a boy of about twelve years old; and this was the method the Doctor took to make his merits known to that metropolis. The boy preceding his father in the street, cried aloud, *mon pere est le plus grand medecin du monde.*—I am

the boy.—The doctor following him, replied, in an affirmative tone of voice, *l'enfant dit vrai*. I leave my readers to judge who is the doctor. I expect, therefore, that henceforth every one will consider this enquiry as a bill of fare to a superb entertainment, and that those who have never read Dr. Cadogan's dissertation, will be pleased to read my enquiry, as preparatory to the delicacies which they will find in the doctor's treat. And as those who have read Dr. Cadogan's work already cannot *well* read mine before they have read his, I desire they will read it after, to assist them in their second concoction. And this is all I expect from the public, for the immense labour which I have taken to elucidate this production, and to explain the amazing merit which it contains, and the just utility of which it must prove to be, not only to this kingdom in the original work, but in the various translations which I am credibly informed, are now undertaken, by order of the several potentates, who reign within a circle which may, in imagination, be drawn; and would touch the extremities of two diametrical lines, crossing, one from the eastern coast of Japan, to the western of California, through Asia, Europe, and America; the other, from the north of Lapland, passing through Europe and Africa, to the extremity of those countries which have been lately discovered in the southern hemisphere. And when these translations

lations are completed, I humbly hope, and solely for the sake of their understanding Dr. Cadogan's dissertation as it ought to be, that my candid enquiry may receive the like honour.

And in this place, I hope, that my readers will remark, and Dr. Cadogan be pleased with the precision with which I have delineated the nations wherein this dissertation is ordered to be translated; for had I said through the whole world, I could not have proved it to be true: because I have no knowledge of the undiscovered parts, nor any correspondence with the unknown natives; and consequently, Dr. Cadogan might have said of me, if he shall unhappily dislike this enquiry, that my words *give no kind of idea*, as he does of other authors, who, as he assures us, have none to the words gouty, rheumatic, bilious, &c. a circumstance which I shall shew, that the doctor hath most strictly observed: and from the censure of which neglect I would willingly preserve myself.

And I would willingly receive myself
as he writes us, have none so the words given,
I feel that the doctor hath most fully
observed, and from the centre of which neg-

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A

CANDID ENQUIRY, &c.

SECTION I.

IT is an auspicious circumstance, when a critic intends to illustrate the works of a philosopher, that the very first passage in the book affords him the happy opportunity of displaying his critical accomplishments. And for this desirable acquisition I am obliged to the unequalled genius of Dr. William Cadogan, even in his introduction. This he prudently begins with an apothegm, taken from St. Evremond? "*to enjoy good health is better than to command the world.*" Which prettily suggests, that the doctor in his dissertation, intends to bestow on his readers, something more estimable, than empires, crowns and sceptres." St. Evremond, as the doctor says, was a *practical philosopher*, who understood the *use and value, of life and health,*
better

better than most men." Let us see then in what manner he employed his time in acquiring and preserving those blessings which he so well understood, and estimated at a greater value than the command of empires. We shall then know what was the practice of his philosophy, that we may all follow his example and attain the same ends. During life he lived with kings, princes, princesses, dukes, marshals, and other of the nobility, both in France and England; and these the most voluptuous of the age. He loved, studied and ardently pursued the convivial pleasures; he ate and drank even to the day of his death, in profusion, all kinds of rich meats and wines, which were found at the repasts of the great, at whose tables he was constantly present; and was singularly noted for his studied refinements and indulgence in the delicacies of the palate; he was even sentimentally a voluptuary. He loved the accounts of those pleasures which young men enjoy even after he himself was rendered incapable of tasting them: and, after a life of happiness and health, which, with no very good constitution, he supported by living in this indulgent excess, he died at ninety-two years of age.

And now, will any man say, that Dr. Cadogan, has nothing new, nor ingenious in his book? When, in the first sentence of his preface to a dissertation, for the preservation of health and long life, by exercise and temperance, he has introduced St. Evremond, the greatest voluptuary of his time "as almost the only man that cultivated an uncommon length of days into a rational series of pleasure, and, what is much more, an uninterrupted course of happiness." The propriety of introducing the length of life, rational pleasure, and perfect happiness of an avowed epicure, to recommend an abstinence

stinence from sensual delights, is not the only singularity which is new in this passage. For unless I am mistaken, this is the first time that any man has published, that by *cultivation* one thing can be changed into another; such as, a *length of days* into a *series of rational pleasure*. This discovery will, I hope, induce the gardeners to take the hint, and follow it: and when they, next time, set *cabbage plants* in the ground, that they will not forget to change them by *cultivation* into *pine apples*, which seems to be as easily to be done, by *culture*, as changing days into rational plants. However, St. Evremond “did much more, he cultivated a length of days into an *uninterrupted course of happiness*, and certainly, this is new also; that an *uninterrupted course of happiness* should be much more than a rational *series of pleasure*.”

I have taken the liberty of remarking the precision with which the word *cultivation* is annexed to the idea of changing and the *distinction* between *pleasure* and *happiness*, as above stated, to shew how observant Dr. Cadogan is in avoiding that fault, which he censures in others, of using words without all kind of ideas.

Whoever will read the life of St. Evremond, must find, that neither exercise nor temperance were the causes of his health, longevity and happiness. However, I am not, on that account, inclined to quit the sound philosophy of Dr. Cadogan, because he hath so ingeniously adduced a remarkable voluptuary as an instance of the truth and value of his doctrines of self-denial.

And when I consider that the doctor's sentiments are professedly “that truth, in things of general use and necessity, particularly the health of mankind, lies most commonly on the surface,” I am
amazed

amazed he did not observe and assign, as a particular instance of these different effects of high living in St. Evremond, that there was something, in him, which is but very rarely to be found in other men: and from thence, that health, longevity and happiness were the consequences of sensuality and epicurism. It is, that this practical philosopher was blessed with a great *wen*, which grew between his eyebrows, as it may be now seen in his prints and in the statue of him in Westminster Abbey. I am, therefore, greatly afflicted that this cause, which operated so diametrically opposite to Dr. Cadogan's system should have been totally unobserved by him. For otherwise I am convinced, from his liberality of temper, he would most certainly have prescribed such wens, as the infallible preservatives of health, long life, and happiness to all those refractory voluptuaries, who will not observe his *only true and genuine regimen*. And, therefore, as he has not given that prescription, he is hereby invited to it by my permission if he please; and to tell his patients also, as he does of the Magnesia; they may take *my wen*, if they will not pursue *my diet*; for I am sure he is as justly entitled to this discovery of the preceding effects as arising from a wen, and to call it his own, as to that of the Magnesia, of which, perhaps, I may give some farther account, when I come to that passage on the Magnesia. And, in this wen, the whole cause of St. Evremond's singular felicities did as certainly lie, as did the joke of Mr. Bayes in the boots of Prince Volscius.

To the novelty of the preceding remark Dr. Cadogan adds, a moral reflection, not less new than ingenious. "The generality of men seem to me not to bestow a thought upon either health or happiness,

happiness, till it be too late to reap the benefit of their conviction; so that *health*, like time, becomes *valuable only*, when it is lost; and we can no longer think of it but with retrospection and *regret*." If health does not become *valuable* till it be *lost*, why did the doctor write this dissertation to preserve it from being lost; and to deprive his readers and disciples of all its *value*? besides this, it seems not a little original, that the circumstance of thinking of it with *regret* should form a part of its *value*. There must be something extremely singular in this instance of *losing health*, to make it *valuable*. If I lose my coat, my money, or my reputation, it does not seem easy to account in what manner the loss of all these things can make them *valuable* to me. Does not this seem to say, that *effects* are only *valuable* when the *causes* of them are no longer in our power? and here, I humbly apprehend, that a dissertation on the most certain means of making health *valuable*, by *losing it*, would have been more consentaneous with this idea of Dr. Cadogan, and more likely to be observed, by most people, than the present. In this place also the precision of the ideas, which is contained in the words *lost* and *valuable*, are stupendously new and original.

The following observation of Dr. Cadogan has no less merit in newness of imagery. "Some industrious men, fancying that whatever is valuable must lie deep, have, with the greatest alacrity in sinking, *plunged* into the *abyss* of ancient Greek, Roman and Arabic learning, in hopes to find good precepts of health, and sure remedy for disease. But after all their *pioneering* into *endless heaps* of *rubbish*, what have they found, at last, but this; that, in natural philosophy, some of the
ancients

ancients have been very ingenious in guessing wrong." If we paint in our minds the images which are conveyed by the preceding expressions, we must fancy a diver, plunging into a deep sea, to find health and remedy at the bottom of it;---if we do though we shall be much mistaken; for this *diver*, who is gone to the bottom of a sea to find something, is in an instant converted into a *pioneer*, working into an endless heap of rubbish, on the surface of the earth, to find it there. This I humbly imagine exhibits an instance of the doctor's preservation of metaphor, in his style, which is not less new, nor less to be admired, than the precision, which exists between his words and ideas. I presume also that the great ingenuity, in *guessing wrong*, is very new, since it has hitherto been conceived, that guessing *right* was the great mark of ingenuity. That this guessing ingeniously wrong, should be confined to *some* of the ancient philosophers only, and not attributed to the whole number, seems to be very new and original also. For as they did not *all* guess wrong, in natural philosophy, I would gladly know, how the others guessed, who did *not* guess wrong? because I have hitherto heard but of two ways in guessing; the *right* and the *wrong*. Dr. Cadogan has, in his dissertation, adopted the corpuscular philosophy of Democritus and the Epicureans. Did they guess wrong, in natural philosophy? if they did, it seems the doctor hath voluntarily embraced what he declares to be wrong; and this is certainly new, in consistency of opinion, as well as in the manner of taking it for his own purposes.

Dr. Cadogan happily advances, with great expedition, in preparing his readers for the reception of the dissertation itself. "These ancient philosophers

phers never studied nature at all; they made no experiments, and therefore knew nothing of her. In the art of physic it was impossible for them to know much; for, before our immortal Harvey's discovery of the circulation, there could be no physiology at all, nor any knowledge either of the internal structure or action of any part of the body." *That they never studied nature at all*, is, I am apprehensive, an assertion on the brink of the abyss of error, if it be not plunged into it over head and ears. Do the just descriptions of all those symptoms, which attend the rise, progress, and conclusion of diseases; the changes which they put on, as indications of recovery and death; and the effects which are produced by medicines and diet so faithfully pourtrayed by Hippocrates and the ancients, form no part of the study of nature? I am afraid Dr. Cadogan is, in this instance; like Peter, the wild boy, in the woods of Hanover, a human being by himself. For the universal decision is, that nature hath never been more studied, nor better understood than by the divine old man, as he is frequently called, in all these particulars so essential to a perfect knowledge in the practice of physic: and that they have received but little improvement from the discovery of the circulation of the blood. Nor is it easy to conceive how the want of this discovery can preclude the *knowledge of the internal structure or action* of any one part of the body. For anatomists are of opinion that the *structure* of a vessel may be known without knowing the liquor which it contains; and that the *structure and action* of the heart were not discovered from the circulation of the blood; but that by dissecting that organ, they have discovered the mechanism by which that fluid is circulated. And they un-

nanimously

animously affirm, that neither the structure nor action of the lungs, stomach, liver, spleen, pancreas, intestines, nor any of the viscera, or of the muscles, either internal or external of the whole body have ever been discovered, in consequence of the circulation of the blood. I would not be understood, as if no philosopher had hitherto presumed to draw conclusions as true, from erroneous premises ; but that no one, before Dr. Cadogan, hath ever been so happily new in this physiological instance. Many physicians, also, are not so perfectly convinced as Dr. Cadogan is, *that the ancients never studied nature, made no experiments, and therefore knew nothing of her.* Even in this instance of the circulation of the blood, they cite some passages from Hippocrates that may not be improperly offered, in support of their opinion. That father of physic, in his book, on the parts of a human body expressly says, *that all the veins communicate and run into one another.* And those who study the ancients, know that, by the veins, they understand all those vessels which convey the blood, whether they be veins or arteries. In his book on the veins, he says, *the veins being disseminated, through the whole body, diffuse both spirit, flux and motion ; that all the veins arise from one ; but from whence this arises or where it terminates he knows not ; because, in a circle, there is neither beginning nor end to be discovered.* In his book, on aliment, he says, *“the heart is the origin of the arteries, by these the blood is diffused through all parts of the body, and the spirit and the heat pass through them also.* In like manner, in his book on the heart, he says, *this is the fountain of human nature ; and here the rivers are by which the whole body is watered, and these give life to man.* In his book, on principles, he says, *the heart and the*
venæ

vena cava are always in movement. These, and a multiplicity of other passages, have been discovered by those who have dived into the immense abyss of ancient Greek learning, which, although they may not amount to a full and explicit discovery of the circulation, do nevertheless invalidate the assertion of Dr. Cadogan, "that the ancients never studied nature, nor made any experiments; and, therefore, knew nothing of her?" Even in this instance of the circulation, it may seem not unlikely, that this novelty, respecting the ancients, must have arisen from Dr. Cadogan's having forgotten what they say. For, surely, no man will accuse him of differing in opinion from them, without having consulted their books: and if he has, he could not have delivered such an opinion, without forgetting what he had read.

To the preceding passage Doctor Cadogan adds "that before the justly celebrated Asellius and Piquet, there could be no idea of nourishment." This seems equally new and original, that Hippocrates and other ancient physicians, who wrote professedly on aliment and diet, before the time in which the preceding anatomists discovered the lacteal ducts and receptacle of the chyle, should have no idea that food would afford nourishment to those who ate it.

Nor was it known, says the doctor, "how our food passed into the blood, or what became of it; but now, since these lights have shone in upon us, all the ancient conjectures, reasonings and systems *must* vanish, like clouds before the morning sun?" Doctor Cadogan then allows, they have not *hitherto* disappeared; because *must* signifies a *future time*. But until that hour shall arrive, I am not ashamed to own, that to me it does not appear how this new

discovery, that the food we eat passes from the intestines by the lacteal ducts into the blood, can give a better idea of nourishment than before that time; that is, of assimilating new particles to the old stamina. The ancients knew that the food passed into the stomach and intestines, and nourished the body. The moderns have found that it passes from these viscera into the blood, by the lacteals, and then nourishes the body. This is like a new discovery of passing through two antichambers instead of one, before you come to the cabinet of business. And I imagine this additional discovering of passages will no more instruct us in what manner business is carried on in the last, than if the second place of passing had never been discovered. And there it rests to this day.

However, that the time will come when all the ancient conjectures, reasonings and systems *must* vanish, is not only great news, but would be also exceeding good news, if the doctor, in his simile, did not tell us like what it *must* be done: like morning clouds which *vanish before the sun*. It may be, thought I, if they vanish before the sun in the morning, they may do the same in the afternoon. It was one o'clock, I hastened to the window; but as the wind blew westerly, I saw the clouds flying *before* the wind, against the course of the sun and vanishing *behind* him. As the afternoon advanced the wind changed to the north; the clouds still went before the wind, *a-cross* the direction of the sun's course and vanished. I then believed that this phenomenon was strictly confined to *morning clouds*; but on repeated observations, I have never found that they vanished *before* the sun, but when the wind blew from the *east*; and therefore I could not avoid concluding that as this was a single instance,

stance, and all the others universal, that it was still before the wind, and not before the sun that the clouds vanished. Thought I, if the ancient reasonings and systems must only *vanish like morning clouds before the sun*; for aught I see it is more than probable they will last for ever. This I take to be a new way of illustrating, the certainty of a thing to come, by the existence of another, which hath never yet appeared.

However, Doctor Cadogan, reluctant as he is to disallow *all knowledge* in the ancients, is condescending enough to grant, “that some few, and very few *useful discoveries* they made in medicine which have descended to us, and with some late tricks in chemistry, are the *chief foundation* of modern quackery.” Here it seems those ancients, *who never studied nature at all and knew nothing of her*, did nevertheless discover some *useful medicines*, that have descended to *us*. This I take to be extremely new in the consistency of argument. It seems not a little new, as well as singular also, that the *modern quackery* should be founded on the *useful medicines* of the ancients. As to the tricks in chemistry, they only form a part of this quackery, and, I suppose, from their being named tricks, they are not to be deemed *useful discoveries* in medicine.

Having, in this manner, treated the ancients as a set of ignorant fellows, who knew *nothing* in medicine, and confirmed his opinion, by acknowledging, that they discovered what is *useful* to the moderns at the present time, Doctor Cadogan, most properly, apostrophises in the following observation. “Thus have men, of deep learning, if the knowledge of ancient errors can be called so, sunk far out of sight of truth, which, in things of

general use and necessity, particularly the health of mankind, lies most commonly on the surface." That is, in plain English, that these diving pioneers, have found at the bottom of the abyss, several *useful discoveries* in medicine, which the doctor knows to have been *errors* in the ancients; and those moderns, who have looked for truth, on the surface where it lies, particularly in the health of mankind, have nevertheless found *all* of them. Doctor Cadogan then relates, "the great disservice which hath been done to every fair *practiser* of physic, by the ignorant and presuming, or the dishonest and the artful, in raising mens expectations to hope for too much from it, more than it ever did or can do." I sincerely wish the same mischief may never happen from raising hopes and expectations beyond that which ever was, or can be done by exercise and diet. But Doctor Cadogan continues," a skilful physician (unless he be sent for too late and dismissed too soon which is generally the case) will employ those intervals of relief and respite, to *introduce* the powers of life and nature to act for themselves, and insensibly withdrawing all his medicines, and watching carefully over his patient's whole conduct, leave him confirmed from conviction of their necessity, in such good and salutary habits, as cannot fail to establish his health for life?"

If Doctor Cadogan, by his skilful and honest physician, means such a one who despises the knowledge of the ancients, I should humbly recommend another reading to be substituted in the first part of the antecedent passage; which is, that "unless he be sent for *too soon* and dismissed *too late*." And, indeed, I do not see how the most skilful physician, that has been sent for *too late* to be of service to his patient, can do him good; or be

be dismissed *too soon*, unless it can be explained in what manner a physician, by being *longer* employed, can be enabled to do that which is *too late* to be done. As to the intervals of *relief and respite*, in which a physician will *introduce* the *powers of life and nature* to act for themselves, I apprehend that this relief and respite can mean nothing but the *death* of the patient; for, before these *powers of life* have *left* the body, how can they be *introduced* to act for themselves? would it not be an absurdity to say, that you will introduce a man into his own house, who hath not left it? does not Doctor Cadogan, then, by this relief and respite, intend the death of the patient, and by the introduction of the powers of life, the revivifying of him? and if Doctor Cadogan can do this, he can restore the dead, which hitherto hath not been done, and then he is a miraculous doctor. What confirms me in my opinion, of this explanation of the doctor's text, is the impracticability of *insensibly withdrawing his medicines*, without the patient hath *lost his senses*. And then, what can so effectually confirm a patient, in the conviction that his health will be established for life, by the salutary habits of his physician, as that he hath recalled him from the dead. This is, I think, a vast, as well as a new improvement in the art of healing.

The next object of my enquiry is, on that which Doctor Cadogan says of his dissertation. "I must beg the reader to consider it, as what it really is, a hasty extract of a much larger work, intended to take in the *whole circle* of chronic diseases, here *comprehended* only in their representative, the gout." As to the doctor's request, that his readers will believe it to be a hasty extract, it is universally granted, as far as it has hitherto come to my knowledge.

But how came it into his head to request his readers to consider this thing as what it is? should he not rather have intreated them to consider it as what it is, not, considering what it contains?

Indeed, it seems difficult to conceive how the gout can be the *representative* of the king's evil, the jaundice, or the scrophula; because, by the laws of a gouty constitution, the gout, being an alien, although he be naturalized, cannot be a lawful representative of the disorders of other constitutions. And since the doctor says in another part, that the gout is a disease of the best constitutions, how can it properly represent the constituents of the worst. This idea seems to be taken from the British house of commons; but it is not yet so sufficiently evident to remove all objection, that the worst are represented by the best in that assembly, as that Doctor Cadogan should make the gout, which is the best, to be the representative of the worst diseases, which are the dropy, jaundice, scrophula, &c.

Besides the preceding, there seems to be another difficulty in comprehending how a dissertation, which professedly treats of the gout as a disorder of the *best* constitution, can *comprehend* in it all the disorders of the *worst*; for surely the *worst* can form no part of the *best*. And, since this dissertation *comprehends the whole circle* of chronic diseases, in its *representative*, the gout, how can the great work contain more in its *circle*, unless, indeed, there may be a *circle* which comprehends *more* than *that* which comprehends the *whole*. This seems to be, according to the ancient opinion of those philosophers who are ingenious in guessing wrong, and talked of the *whole* in the *whole*, and the *whole* in every *part*. This I think is new and original in all its parts, whatever may be the error in every one of them.

Having

Having said thus much of his intention, the doctor again applies to his readers, and says, "if what I have said may seem to want farther illustration, or demonstrative proof, he, the reader, will look upon it only as a sketch to furnish hints for his own thoughts and reflections, either to improve mine or reject them, entirely as may seem good unto him."

Now it was from this hint of the doctor's suspicion that his dissertation might stand in need of some farther illustration and more demonstrative proof, that I engaged in the writing of this enquiry; and I humbly hope that not only all such pains will be spared to the doctor's readers, but to himself also, of writing a work, consisting of a *circle*; *which is to hold more than the whole of the subject which is wholly contained in the circle of this present dissertation*; unless the doctor has discovered the secret of putting *more* into a book than it will hold, which would certainly be a most striking novelty.

Having, in this manner, enjoyed and manifested the delightful novelties, in physical philosophy, which are contained in Doctor Cadogan's preface, I come now, with equal pleasure, to remark the liberal and disinterested sentiments which he avows, respecting the faculty of physic. "If the reader thinks, from what I have said here or in the *brochure* itself, that I mean to impeach the practice of physic, in general, I say, that is not my intention." And this I expect that every reasonable man will believe; because, by these means he would hurt the cause, which, next to promoting the national health, seems to be that of getting himself preferred to all other physicians.

But in this place the honorable sensation of physical dignity takes whole possession of his soul, and

elevates him into an utter indignation against some practitioners, who, as he thinks, disgrace the profession. "I would decry all quacks from Æsculapius to the present, either as ignorant fools, or self-convicted impostors, advertising daily lies, whether mounted on stages or riding in chariots." To the honour of Doctor Cadogan, I presume, this is the first time that Æsculapius hath ever been distinguished with the appellation of a quack. And really, if he were so, it seems to do no great honour to the practice of the regular physicians, none of whom, as far as I have heard, have been deified for the cures they have performed, nor have they had temples erected to them, whose walls are covered with the votive offerings of gratitude for signal and unexpected cures. Indeed, I am not a little concerned for Doctor Cadogan's fame and safety, who has so indiscretely irritated the present advertising doctors, by traducing them and disparaging their medicines; to say nothing of the fellows and licentiates of the college, who are considerably enraged at this description of quacks, both in and out of chariots. Their united powers are not a little formidable; Dr. Hill, Dr. Becket, Dr. Sterne, Dr. Walker, Dr. Smith, Dr. Kulick, Dr. Rock, Dr. Norris, Dr. Lowther, and several other eminent doctors, in this advertising way, without including Dr. James, do really accuse Dr. Cadogan of advertising *his* Magnesia to be sold at Mr. Townshend's, apothecary, in New-Court, Carey-Street,* They are therefore most grievously offend

* I am a little surprised to find Magnesia so often advertised in the papers by different persons, some of which have made use of my name without my consent or knowledge, but each contending for the excellence of his own preparation of it. If the gentlemen will give me

ed at the preceding passage in Dr. Cadogan's dissertation, which is intended to brand themselves with the ignominy of self-convicted impostors; and their advertisements with that of being daily lies. Dr. Hill, in particular, does not scruple to affirm, that Dr. Cadogan's advertising his own excellencies above all other physicians, to say nothing of *his* Magnesia, is not less a proof of quackery in him, than *his* advertising the virtues of his medicines, under their

me leave to judge at all of my own prescription, I shall take the liberty not to decide upon the goodness of theirs; but to tell the world what good Magnesia is; and I desire you to publish this short history of it, as some amends for using my name without my leave.

When I first introduced and recommended it, now above twenty years ago, I never intended it should be a secret to be advertised for the private profit of any man, knowing that a good medicine would find its way into the world without the contemptible method of advertising: I therefore gave the receipt to several apothecaries, not doubting but this would make it public enough, and accordingly it soon grew into reputation: but no sooner was it known to some chemists, than they found out means to adulterate and undersell it, so that I soon saw in many places it was not the thing I meant at all. This obliged me to desire Mr. Townshend, apothecary, in New-court, Carey-Street, and his partners, to make it strictly, according to my own prescription, for myself and friends, which they have continued to do ever since; but to shew that I do not mean to favour any man, and prevent as far as I can all further advertising and contest about it, I here publish that prescription; which is as follows.

Take five pounds of the sal. cathart. amar. or that salt made from the bittern or mother of sea salt, which has been falsely called and sold for Glauber's salt; dissolve this in a sufficient quantity of the softest and purest warm water, then decant, filter, or strain the liquor, so as to get it free from all grit and dirt, then pour into it a pint of ol. tartari per deliq. it immediately precipitates a white powder, which subsiding to the bottom, the saline water is to be decanted off, and the powder washed repeatedly three, four, or more times in warm soft water, of the same kind with the first, till there be not a grain of saline acrimony left in it; then take it out and dry it on a chalk stone by the fire, or in Boerhaave's stove. This is the Magnesia I mean.

The success of the process depends upon the goodness of the ingredients, particularly of the oil of tartar, and the softness and purity of the water: I have, therefore, sometimes recommended distilled water, but rain or Thames water, well purified or filtered, will

their true names. I pretend to no nostrums, says he; I talk of *my* Balsam of Honey, *my* Elixir of Bardana, *my* Essence of Water-dock, *my* Tincture of Valerian, and *my* variety of other medicines, names as well known, and as respectable as those of Dr. William Cadogan; and their excellencies in curing diseases, are as celebrated as those which the doctor is so prompt in assuming to himself.

I defy the world to say, that I have taken the least idea of my medical compositions from him. But, if my friends do not deceive me, he has studied and made very free with *my* style, in *my* advertisements; and I am bold enough to say, that *my* tincture of *century* bids as fair to make a man live a *hundred years*, as the *regimen* of Dr. Cadogan.

I confess that *my* enemies do accuse *me* of *my* ascribing virtues to *my* medicines, and of *my* naming them from ingredients which they do not contain. If Dr. Cadogan hath founded his illiberal declaration of self-convicted impostor, on these reports, I shall think it

will do very well. I need not add, that it should be made in clean earthen vessels, well glazed; and that it is best made in warm dry weather. The criterions by which it may be known to be good, are these: it should be of a brilliant whiteness, very light, impalpable, insipid, and inodorous, except that when it is very fine and dry, upon pouring water on it suddenly, a very delicate perfumed vapour will rise, scarcely perceptible but to those who are well acquainted with it. The common method of adulterating it, is to use, instead of the oil of tartar, common soper's lie, or a lixivium of pot-ash, which gives it a bitter, saltish, or urinous taste, disgusting the palate, and nauseating the stomach. When it is genuine, it is a good medicine in most acid indigestions of young or old, and the best preventative of the gout and rheumatism, of any thing I know; but it is not to be taken in all cases, nor unadvisedly in any. I shall make no apology, but that I mean honestly to serve the public, in giving you and myself this trouble.

George-Street, Hanover-Square,

W. CADOGAN.

December the 16th, 1767.

it time enough to disprove his assertions, when he hath given full evidence of the truth of those great things, which he says of his system and of himself. And, as I am honoured with being pronounced a quack, in company with the divine *Æsculapius*, I shall never regret the being contemned and separated from the regular Dr. Cadogan. But I confess *his* decrying of all quacks is admirable indeed. What! Prince Volscius kill Prince Volscius! In saying this, Dr. Hill suspended his harangue, and received the applause of the whole company and of *himself*; for the doctor is fond of doing justice to the merits of that *last person*.

But, as I wish to have peace restored among all the brethren of the same profession, I cannot but think that these irregulars who are leaders of the flying squadron in physic, have rather taken up their resentment too warmly, and not on sufficient grounds to warrant this sly and sarcastic oration of Dr. Hill. And this I hope to prove in my explanation of the following passage. "The art of physic, fairly and honestly practised, I honour," says Dr. Cadogan, as the first of professions, comprehending the most useful, the most extensive, and universal knowledge of all nature." This is, indeed, entertaining a very exalted idea of the profession of physic, which may not be warranted from the science of very good physicians; however, Dr. Cadogan, finding all this knowledge concentrated in himself, is very ingenuous in supposing, that all other real physicians are possessed of it also. Notwithstanding this candid opinion of the doctor, and lest all the faculty of physic should not answer to this description and sink in estimation, when only some few members of the college may be found so replete with universal knowledge, I would willingly have the idea
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of the physical science more limited in its comprehension. Let the medical art be the great pill box, in which anatomy, physiology, botany, chemistry, pharmacy and a long *&c.* are the little pill boxes, one within the other, and the great one including all. For it seems too much to cram the universal knowledge of nature entirely into one nest of pill boxes. To say the truth, I do not discern how astronomy, agriculture, geography, geometry, navigation, dialing, the fluxing of metals, architecture ship-building, and a vast number of other knowledges are included in the profession of physic.

And now, having delivered his opinion of the first of professions, Dr. Cadogan proceeds to a definition of such as merit the appellation of real physicians. "I think, says he, a real physician the most liberal of characters upon earth; by which I do not mean every doctor that goes about taking guineas; but him who will neither flatter the great, nor deceive the ignorant; and who would prefer the satisfaction of making one invalid a healthy man, to the wealth of *Radcliffe*, or the vogue of *Ward*."

And in this place, I beg leave to request Dr. Cadogan, before he carries this opinion into actual execution, to reflect a little, whether such a moneyless practice may not be contrary to the rules of the college, and to the construction of the oath which he hath taken, on being admitted a fellow. As to the vogue of *Ward*, without his profits, I can easily suggest that a *real* physician will readily renounce all that. But I have some suspicion, that the wealth of *Radcliffe* would not be refused, for the sake of curing *one* invalid by any one real physician of *English* production. And, except Dr. Cadogan, and some few of the *real* Scotch physicians,
who

who, almost worn out with doing good in Edinburgh, and oppressed with the weight of their practice, and of their fees, retire from that metropolis to this, in order to shew their affection for the English, and their zeal to serve them, by practising with full resolution never to touch their guineas, I doubt there is not another to be found. And now, since I have shewn, that it is my opinion, that no one Englishman can possibly be included, within Dr. Cadogan's idea of a real physician; and as the being a Scotchman is not, at present, the most likely thing to procure imitators I hope the advertisers will moderate their indignation, and manifest as little resentment as the great hearts of men of such eminent abilities can shew on occasions so justly provoking.

And here, I humbly hope that, by thus enquiring into the merits of Dr. Cadogan's preface, which contains but ten pages only, that I have fairly evinced, whatever be the number of its errors, that no one production hath at any time contained so many ingenious novelties, in so small a compass. And this, I apprehend, will prove to be no small confusion to those enemies of that real physician, who have so groundlessly and illiberally asserted that his *brochure* contains nothing that is *new* and original. And no small incentive to my readers to proceed to the reading of the subsequent parts of my enquiry.

S E C T I O N. II.

THE enquiry into the merits of Dr. Cadogan's preface, being now finished, I am happily arrived

arrived to that of the *brochure* itself. And this the doctor hath introduced with an observation, in natural and moral philosophy, which is scarcely inferior to the introduction of the practical philosopher, in the exordium of his preface. In this it is said, "however common it may be for men that suffer, to complain of the evils of life, as the unavoidable lot of humanity; would they stop but for a moment to consider them in the light of reason and philosophy, they would find little or no foundation in nature; but that every man is the real author of all or most of his own miseries. Whatever doubt may be entertained of moral evils, the natural, for the most part, such as bodily infirmity, sickness and pain, all that class which the learned call chronic diseases, we most undoubtedly bring upon ourselves by our own indulgencies, excesses, or mistaken habits of life, or by suffering our ill-conducted passions to lead us astray, to disturb our peace of mind."

Before the publication of Dr. Cadogan's dissertation, it was generally imagined, that the moral actions of men were absolutely dependant on their own wills; and for this reason, being masters of their actions, that they were justly answerable for the effects of them; and therefore it was just to restrain them by penal laws; which, if their moral acts were not at their own option, either to perform, or to omit, would have been a most ridiculous and ineffectual institution. On the other hand, physical evils have been as generally considered as springing from inevitable causes in the nature of things, in which the intervention of man has no power, and consequently that they are not to be prevented or restrained by human institutes.

We have laws against the moral evils of murder and theft, because they depend on the volition of man, to commit them or to forbear. But against hurricanes and earthquakes, dearths, and other evils which are natural, no legislator hath hitherto thought proper to make laws; because they proceed from causes independant on human powers.

Even bodily infirmities, sickness, and pain, and *all* that class which are called chronic diseases, have not been thought *most undoubtedly* to be brought upon ourselves. The plague in Ægypt breaks out and leaves that country according as the river Nile deserts or overflows it; and I fancy the phœnomena and effects of that river are not such as are within the powers of humanity; and consequently the sickness, pain and death, which it brings on men, are not adduced either by indulgence, excess, mistaken habits of life, or ill-conducted passions; and Ægypt is not the only place in which diseases are brought on by similar causes. The like may be said of those which are endemical, such as the small pox, measles, influenza, putrid sore throat, and others of a similar nature, which apparently prevail in some years and some seasons more conspicuously than in others, as the learned among the most excellent writers have proved by their observations. Even in chronic disorders our miseries are not of our own begetting. Women, at a certain age, frequently fall into those diseases, which are not brought on by any of the preceding causes. Agues are the effect of unwholsome air, or water, in fenny countries, which, by continuance, produce jaundices, dropsies, or general decays of the body. Pulmonary consumptions are frequently consecutive of peripneumonies and pleurisies, and rheumatisms of obstructed perspiration; all which are not owing to
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any ill conduct in ourselves. And this hath been hitherto acknowledged to be true by the most eminent physicians, from the earliest to the present times. And is it right that *their opinions* should be deserted, until Dr. Cadogan hath adduced some *experimental* proofs in support of his own? for, in human evidence, a series of long and unvaried testimony, by judicious men, hath hitherto been deemed more reasonably to be relied on, than the opinion of any one person whose arguments are mere assertion. But although this opinion of Dr. Cadogan may be rejected as groundless, it must inevitably be received as new and original.

To the preceding passage Dr. Cadogan adds, “whatever notions men have been taught, or have received of other causes, such as accidental colds, or particularities of constitution, this or that thing disagreeing, or surfeiting, &c. these are too trifling to produce diseases that commonly last for life,” all physicians, from Hippocrates to Sydenham and all others, who have been distinguished and esteemed for their medical capacities, are known to be of different sentiments; and do really assure us, that pleurisies are brought on by colds; and that putrid fevers do arise from surfeits, which too commonly *last for life*. And they ground their opinions, on this single reason: that too many of their patients have *died* of these diseases. And this, I presume, is a tolerable argument of their lasting *as long as life*. Nor do I find that any of the faculty have hitherto embraced the opinion of Dr. Cadogan, in contradiction to that of all preceding physicians. However, the doctor’s assertion is not, on that account the less new: and it will be deemed *no error*, when proofs can be given that the doctor is *not mistaken*.

To

To the above, Dr. Cadogan adds “ though if you read authors or consult physicians, what do you find, but that you have taken cold, though you know not how, or that your complaints are gouty, rheumatic, bilious, nervous, &c. words that satisfy though they give no kind of idea.” In this passage the doctor hath modestly condemned the whole number, both of dead and living physicians, as men so ignorant, that they write and talk of *things* of which they have no kind of conception. This declaration, methinks, should have been strictly proved before it was so roundly asserted. And although it may be intended only to suggest the superior understanding of Dr. Cadogan; yet a little more reserve, respecting his fraternity in physic, might have been allowed, without letting down his own pre-eminence. What other men may have found, I know not; but this I know, that I never found, in my reading of authors, that I had taken a cold. I have found it in a defluxion, a cough, a quick pulse, and a feverish heat. And to confess the truth, I do not see how I could have found, in the reading of an author, who wrote *many years before* I was born; that I had caught a cold *yesterday*, and who, being dead, could know nothing of the matter.

It seems not a little new and original, that all those dead and living physicians, who so accurately describe the symptoms and progression of these diseases, and the method of treating them, should have no kind of ideas to the words which they use. For example, when Sydenham treated of the gout, had he no ideas of what he was writing? it has been hitherto remarked that no medical writer hath ever been so clear, precise, and intelligible as that author. If the word gouty, rheu-

matic, bilious, &c. be void of all kind of ideas, then I apprehend the disorders to which they are appropriated are not known to have existence. For, if they be known they must have ideas belonging to them, and these terms must convey them. Could Dr. Cadogan but prove, by argument or experiment, that which he hath so freely pronounced on theory and speculation, with what an amazing beneficence would he bless the world ! no less than with the total eradication of all chronic diseases ; for the thing cannot exist which hath no ideas annexed to that term, by which it is to be described. And in truth it seems somewhat original, since the word gouty hath no kind of idea appertaining to it, that Dr. Cadogan should have published a dissertation on the gout. Is not this an attempt to affix ideas to a word which hath no means of imparting them ? and is it not natural to infer from thence, that there are no reasonable grounds on which to found its existence ? must physicians send their medicines into the bodies of their patients on a discovery of diseases to seek them there, as Columbus sought America, on the probability of its existence ? And if none be found therein, the world may bid defiance to distemper and dismiss their physicians. This event, indeed, although it will prove to be a most excellent discovery for these parents who choose to live and preserve their property would nevertheless be a cause of great affliction, not only to their hopeful heirs, who as ardently wish them dead, in order to possess their estates and spend them ; but to the whole faculty of physic, and all the funereal race of undertakers, who live by the good will of disease and death. The countenances of the latter would then, I presume, be so deeply impressed with sorrow, that when any man was to be buried, who died
of

of age, they might stand their own mutes at the funeral without the least suspicion of being unseasonably merry on the expectation of their annual profits.

But it seems that "these words have gained credit and assent only by the politeness of physicians, who, while they are taking their patients money, are too well bred to tell them disagreeable truths: and that it is by their own faults they are ill."

That the politeness of physicians should have the power of making their patients to assent and give credit to words which have no kind of ideas, may be believed, although it be somewhat extraordinary. But when they give their money also, the matter seems to be absolutely incredible. And I should as soon expect that a tradesman, to whom I am unknown, would give me credit for his merchandize, as a patient his money to a physician for politeness. And I humbly conceive that when a patient sends for his physician, and tells him he has a swelling in his great toe, attended with great pain, inflammation and other concomitant symptoms, and the doctor answers, ever so politely, it is gouty, that both he and the sufferer have very clear and forcible ideas annexed to that word. And if they were not so perfectly well bred as Dr. Cadogan represents them, and would tell them disagreeable truths, that it was *their own faults they are ill*, I do not see how the terms of such a declaration could by any means impart ideas to the words gouty, rheumatic, bilious, &c. which the latter could not by themselves as perfectly convey. The cause of the disease; the consistency of opinion; the energy of argument; and the conclusiveness of reasoning seem to be eminently new and happily united in the preceding passage.

Now comes a sentence which rejoiced the heart of every man who read it. "To enquire a little further into this matter may be well worth our trouble. *The task seems to have been left for me.* And I will perform it most sincerely." On reading these words I could not avoid comparing myself to a man, who, having been long kept in a dungeon, had received intelligence that he should come forth to the light to-morrow. But this expectation was of a short duration. For if Dr. Cadogan means by the word *our*, that it is worth the trouble of his readers and himself, I fancy that this *worth* may be somewhat suspected, respecting his readers. But if he intends by *our* to mean, in the royal style, *his own* alone, why then, if his practice encrease and continue, it may have been well worth *his* trouble to have inquired a little further.

I do not deny that this task may seem to Dr. Cadogan, to be left for him; but I think it can never seem to be so left to any man who remembers what Hippocrates, and all those other writers have said on the gout and chronical diseases, from his time to the present. Because the very same causes which Dr. Cadogan hath assigned as productive of the gout, have been declared by all, as well as his regimen prescribed by most of them. Baglivi says, *omnia remedia calculosis et podagricis præscripta inutilia propemodum erunt, nisi vinum, venus, otium et crapula temperantius usurpentur.* Etmuller says, *Bacchus dicitur pater, Venus mater, et Ira obfetrrix Arthritidis.* And what is the English of all this, but that intemperance, indolence and vexation are the causes of the gout; and exercise, temperance and peace of mind are the best remedies for the curing it. Indeed the doctor has withdrawn Venus, as she stands in Etmuller, and placed Ceres
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in her stead. I remember a country justice, who, when a number of young female vagabonds were brought before him, dismissed the handsomest, who was the greatest offender without censure, because she had indulged his worship with her favours. I take the novelty of the preceding passage to have proceeded from Dr. Cadogan's having forgotten what all other authors, on the gout, have said before him, and if that be the task which was left for him, he hath certainly performed it most sincerely.

The next passage in the dissertation is not less admirable than the preceding. "I have, says the doctor, long had it in my mind to write upon chronic diseases in general, in hopes of giving mankind, what most assuredly they have never yet had, a few rational ideas about them." A friend to the doctor said a little waggishly, on this passage, he wished he had kept his hopes and his few ideas in his own mind; for, says he, does it not seem a little presumptuous to affirm that mankind have never yet had a few rational ideas about chronic diseases? And may it not create a small suspicion of the doctor's not having read other authors, who have given the very same ideas which he hath bestowed, I mean without the agreeable contradictions which are to be found in his dissertation on the gout. Those, indeed, are his own, and mankind are obliged to his *liberality* for that gift. I am credibly informed, that on this part my old friend Dr. Hill hath not abstained from remarking the terms of ignorant fools, self-convicted imposters and advertising daily lyes, which are to be found in the dissertation; and that he has boldly pronounced that no advertisement hath ever yet presumed to treat the common sense of mankind with such indignity and contempt, as to assert, that

not one of those who have written, nor one of those who have read, have hitherto had a *few rational ideas* of chronic diseases. Walk in ladies and gentlemen, said Ned Shuter, in Smithfield, the only booth in the fair, always *new*, nothing here which is to be seen in the *others*, gentlemen, always *new*. You lye, said an old woman, you acted the same thing last year and have played no other all this, and you are no better than a cheat. Always new, ladies and gentlemen, pray walk in, was still continued by facetious Ned, who was concerned for nothing but the filling of his pockets, and cared very little for the truth, the newness of the entertainment or the reprehension of the old woman.

And now the doctor with his usual wariness of expression declares, "that the opinion of medicine is vain and ridiculous must appear, I think, very evidently to any one, who recollects, that the art of physic has now been practised, more or less regularly above two thousand years; and most assuredly there is not yet discovered any one certain remedy for any disease. Ought not this to make us suspect there is no such thing?"

I shall not enter into an attempt to prove that the bark is a certain cure for all intermittents, mercury for all degrees of the venereal malady, nor sulphur for the itch. But I will venture to affirm, that nineteen times in twenty they are certain cures for these distempers. And even that circumstance, to a reasonable man, seems to be sufficient justification for an opinion that medicine is not vain; and that since these remedies do so frequently cure, that the application of them is not ridiculous. The preceding passage, I presume, exhibits a happy instance of novelty in energy of argument, and conclusiveness of reasoning.

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We are now told by what means we are to be cured. "It is by *plan*, by regimen, and *successive intention*, that diseases must be cured, when they are curable." Regimen is undoubtedly an excellent contributive to restoring health; and yet I will bett my best coat that as strong a proof lies against its being a certain remedy for any disease, as against the preceding medicines. And, therefore, that it ought as reasonably to make us suspect that there is no such thing. And if the doctor can as certainly cure the gout by regimen, as intermittents are cured by the bark, he will accomplish what no man either expects, or will easily believe, until there be a possibility of bringing testimony of its having failed no oftener in its effects, than the bark has done in its application.

As to the influence of *plans* and *successive intentions*, which are *new medicines*; and as I know not of what they are compounded, in what form they are prescribed, by what means they are administered, in what manner they operate, nor how long the intention must be successive to overtake a cure, I think it will be both vain and ridiculous, in me, to form any opinion of them: and, therefore, I desist. However, I cannot refrain from thanking Dr. Cadogan for having given us these two remedies, together with his very few rational ideas of chronic diseases. And I heartily rejoice that the dispensatory is enriched with two such valuable assistants in the art of medication.

We come now to that which is known by the skilful and learned in nature. "These, says Dr. Cadogan, know well that health is not to be established by medicine; for its effects are but momentary, and the repetition of it destructive to the strongest frames." Who these men can be who are so skilful

and so learned in nature, I am at a loss to guess. They cannot be physicians. For all these are perfectly ascertained of the contrary ; that health, in the venereal disease, is to be established by mercury; and that a salivation is not a momentary effect of it. The preceding assertion seems to be new in the method of cure.

And now, Dr. Cadogan having informed his readers, that health is not to be established by medicine, benignantly informs us by what means it may be most probably effected. "If it is to be restored it must be by gently *calling forth the powers of the body* to act for themselves, *introducing gradually a little more and more activity*, chosen diet, and peace of mind, changing entirely that course of life, which first brought on the disease, medicine co-operating a little."

As this passage is metaphorically expressed, I must beg leave to explain in what manner the imagery appears to my conception. And here my fancy represents to me a stout, boney physician, calling *forth* of his patients body, its powers to act for themselves, in order to *introduce* his *activity* in their place, together with chosen diet and peace of mind. This I take to be justly painting after Dr. Cadogan's expressions. Of what kind of substance this *activity* may be formed ; by what passage it is to be introduced, whether by the mouth, or otherwise, I really am at a loss to say. For surely the doctor considers it as a *substance*, and not as an *abstract idea* of power. Because such ideas have never yet been known to operate on matter, either medicinally or as a regimen. The manner in which chosen diet is to be introduced is easily to be conceived ; but *peace of mind* seems more difficult than *activity*, to be introduced into the human bosom : and this

this I think appears from Dr. Cadogan's chapter of vexation, into which he has introduced no cure for that misery. Were I possessed of this single secret of imparting *peace of mind* to those who want it, I would not doubt of having Lord Clive and the other nabobs for my patients before to-morrow morning; nor of receiving five hundred thousand pounds, as fees, for the curing them of their present horrors.

Dr. Cadogan is now pleased to inform his readers, for the third time, in fifteen pages, "that he has collected a few materials for this work, intended to take in the *whole circle* of chronic diseases, which he intends to put in order, as soon as he can find time and industry enough to set about it in *earnest*; and if he can finish it to his own satisfaction, perhaps he may some time or other trouble the world with it." To give Dr. Cadogan his due praise, I really think he is extremely right not to set about a work, which is so interesting to mankind as health, unless he can find industry and time enough to do it, without *joking*. And if the publication depends on finishing it to *his* own satisfaction, men are so easily satisfied with what they themselves perform, and care so little for what trouble they give the world, by reading it, that I am persuaded we shall be blessed with that circle of physical knowledge which is to include *more* than this circular-dissertation that already includes *all* that can be said on the subject.

However, as this *great circle*, which is to contain *no more* than *the less* was not ready for the press, the doctor says, "at present I think myself particularly called upon to say something of the gout: as that disease was to make a considerable part of my plan. And as I see now so many, and hear of
more

more, who are throwing away not only their money, but, as I verily believe, the future health of their lives, in hopes of a medical cure for it, to shew that such hopes are chimerical, and contradictory to every idea of true philosophy and common sense."

No man will, I think, deny that Dr. Cadogan judged extremely right in listening to this particular call for his saying something on the gout, *at present*. For when he saw so many, and heard of more that were throwing away both their *money* and their health so foolishly, would not he have been extremely remiss in not embracing this opportunity so propitiously adapted to the publishing of his dissertation, and of possessing himself of some of the *money* which these fools are throwing away so idly? I humbly presume that this thought of Dr. Cadogan will not be deemed either the least ingenious, or most ill-judged of all those which are to be found in his *brochure*.

There seems, however, to be no small difficulty in believing by what means a man can throw away the *future* health of his life. I wish Dr. Cadogan would kindly explain in what manner a person may have possession of a thing at *this time* which he cannot possess till *some time after*, and how he can throw away *to-day* what he will not have in his hands before *this day twelvemonth*? because, to my comprehension, this seems to be no less *chimerical and contradictory to every idea of true philosophy and common sense*, than are the hopes of being cured by medicine. However this passage may be considered, in other respects, besides the novelty it exhibits, together with many of the preceding, a conspicuous instance of the doctor's avoiding what he so sensibly condemns in other physical writers, that
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is, their having affixed no kind of ideas to the terms which they use in their literary compositions.

Dr. Cadogan now says, "I shall, *therefore*, take," (for the sake of the money which is so foolishly throwing away, as I apprehend it) "a few extracts from this general plan, sufficient to shew the real original causes of all chronic diseases." *Extracts* from a *plan*? does not this seem to be new and original, and another convincing evidence of the doctors keeping his ideas and his words connected with the utmost precision? For I humbly conceive, that if these extracts be sufficient to shew the real and original causes of all chronic causes, they must be extracted from the great work itself, and not from the plan of the work. Nay, to say the truth, it does not appear to me how the whole circle, respecting causes, can do more than this which is extracted from the plan of it, unless it can shew more than *the real and original causes of all chronic diseases*. It will be endless to remark the great attention which Dr. Cadogan observes at no time to make use of words, which are not the most perfectly adapted to convey his ideas. This passage is, however, remarkably new, in consistency of opinion and perspicuity of style. The causes, however, "are reduced to three; indolence, intemperance, and vexation."

"From one or more of these three causes, says the doctor, I have undertaken to prove, that all, or most chronic diseases are produced." In this passage the doctor differs from himself as he does in the former; for, in that he positively says, these three are the real and original causes of *all* chronic diseases. And in this he declares them to be causes of *all* or *most* chronic diseases. And in this manner, in ten lines, the causes which produce *all* these distempers,

temper, are reduced to such as produce *one* more than the half of them. For the latter contains the most of the two parts. New, for ever new, in consistency of opinion and precision of ideas.

This task, of enquiring a little further into the causes of all chronic diseases, which to the doctor seems to be left for him, seemeth to other people to have been taken up already by innumerable authors, who have preceded him; two of whom I have already quoted in their own words, perfectly expressing these three causes. The novelty of Dr. Cadogan's task, therefore, cannot consist in finding *new* causes, but in amputating all the other old ones, which have been hitherto assigned for these maladies. Now it does not appear to me how the surgeon, who cuts off legs and arms, is superior to the being who made them: nor in what manner *men* can be said *never* to have had a *few* rational ideas about chronic diseases, when they have, for ages, entertained and published the same as Dr. Cadogan's.

We are now told that "different diseases may have the same original cause, so that what would be gout in one, in another might be rheumatism, stones, cholic, jaundice, palsy, &c." That matter, however, is not so clear as this which follows, "that if all these proceed from the same cause, they are all alike to be cured by Dr. Cadogan's method," delivered in this dissertation. And thence it results, that these *extracts* from the *plan*, shewing all the *causes* and all the *cures*, there can remain nothing more to be put into the great work itself, nor any thing to be said by any present or future physician on that subject. Be merciful, Dr. Cadogan, this is rank monopolizing.

"The gout is manifestly, as I think, says the doctor, confessedly a disease of the best constitution,

tion, and may, therefore, fairly stand as a representative of all the rest." I shall say no more on the impropriety of this representation but this; that this is the second time of the gout's being elected by the doctor for that important trust; and I hope it will discharge the duty as it ought to be done. "As such, says he, I shall consider it for the present, and speak of these causes like a preacher in his pulpit," in their order. "But then he adds, it may be necessary to say a *word* or *two* of the gout itself, before we enquire into its cause." Most assuredly it may be necessary to speak a word or two on the gout in a dissertation expressly written on that subject.

Let us now see in what manner Dr. Cadogan performs this necessary work of saying one or two words about the gout. Why it is in saying, "it may seem therefore *needless* at present to trouble ourselves about a definition, *to say what it is.*" And in this manner the ideas of *necessary* and *needless* are happily reconciled. But what is the *therefore*, or the reason of this *needlessness*? it is, "because the gout is so common a disease that there is scarcely a man in the world, whether he has it or not, but thinks he knows perfectly what it is." So does a cookmaid think she knows what fire is as well as sir Isaac Newton. And so she does, as to the first cause of it, and much better as to its effects of roasting, boiling, baking, stewing, &c. which, according to the ideas of the practical philosopher, St. Evremond, form by much the best part of the science of fire.

I shall, therefore, say no more on Dr. Cadogan's opinion of Sir Isaac and the cook. But it must be remarked, that if a man's *thinking* he knows, *what things are*, does in reality make him a *proper judge* of
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of them, why then Dr. Cadogan's dissertation on the gout, as well as a definition of what it consists, are equally *needless*, as far as to the cause of that disease; and the *former* might as well have *never been published* as the *latter omitted*.

But as it is clearly the intention of Dr. Cadogan to persuade us, that no man has hitherto had a *few rational ideas* about this distemper, so is it evident also, from the manner in which the doctor expresses the man's presumption in thinking that he knows what the gout is, that *he* thinks the said man knows nothing about it. Why then is he silent? perhaps the doctor may be privately of the opinion, that those very men who, as he says, have never entertained one rational idea of the gout, have nevertheless already published all that can be written on the subject. And therefore that it is more prudent to slip from the *necessity* of saying something, to the *needlessness* of saying any thing at all: and by that prudential thought to avoid a discovery of an incapacity to offer any new matter on that head. An idea of such an impracticability, of saying more than has been already said, will naturally accrue from reading Sydenham, Musgrave, and many others. However, if this error, in knowing perfectly what the gout is, should be universal, except in Dr. Cadogan, the desisting from the design of saying *one or two words* about it may be exceedingly fatal. For, although there can be no doubt, but that as soon as this candid enquiry shall be read through all Great Britain, that every arthritic person from the Orkneys to the land's-end, will apply to Dr. Cadogan for a cure; and as during the time in which he is dispatching these patients, this enquiry will *most assuredly* be translated into all the languages of the known world; and then that all who
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are afflicted with the gout will come posting to this realm to be cured by Dr. Cadogan. I am apprehensive, without *this word or two*, that other physicians may not know what it is, and therefore be not enabled to prescribe as they ought. And altho' I really have as good an opinion of Dr. Cadogan, as of any physician, for dispatch in business, yet I question whether he may solely be sufficient to dispatch all those who must apply to him as the only proper person; and therefore I wish he had spoken one or two words at least. Altho' it may seem, that Dr. Cadogan is rather too parsimonious in not delivering to his readers not one or two words, to tell them what the gout *is*, yet is he liberal enough in informing them what *it is not*. I will venture to say, says he, "what I am persuaded *it is not*, though contrary to the general opinion. It is *not* hereditary, it is *not* periodical, and it is *not* incurable." And here it appears extremely original, that this performance of Dr. Cadogan should be entitled a dissertation *on what the gout is*, in the first page; when in the seventeenth it is incontestably on what the gout *is not*. This passage appears to be new in consistency of opinion; and in marks of no common practitioner.

Were a man to give credit to all the most eminent physicians who have ever written, from the days of Hippocrates, to the day before this dissertation was given to the world, he must be of the opinion, that the gout *includes* the whole three things which Dr. Cadogan says *it does not*. I shall, therefore, before I quit my long-established faith in other great men, presume to enquire into Dr. Cadogan's reason for his being of this opinion. And then, if there be a just cause for implicit faith, it shall be given to him.

"If it were hereditary, says the doctor, it would be necessarily transmitted from father to son, and
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no man, whose father had it, would possibly be free from it. But this is not the case; there are many instances to the contrary. It is, therefore, not necessarily so; but the father's having it inclines or disposes the son to it." I suppose Dr. Cadogan does not confine this method of argumentation and proof to himself and the gout alone. Let us try it in another instance. If it were *hereditary* to have two legs and two arms, they would be *necessarily* transmitted from father to son; and no man, whose father had them, could possibly be free from them: but this is not the case, there are many instances to the contrary. They are, therefore, not necessarily so: but the father's having them inclines or disposes the son to have them. Are legs and arms hereditary or not? I leave this to be decided by the learned of Europe, first remarking; that if nothing be hereditary, but what must *necessarily* descend from father to son, then in nature there is nothing *hereditary*.

"This disposition however, is, as Dr. Cadogan says, the *causa proegumena*, or prædisponent of the learned, which of itself never produced any effect at all; there must be joined the *causa procataretica*, or active, efficient cause, that is, our own intemperance or mistaken habit of life, to produce it; and accordingly as this operates, more or less, so will the gout be." In this place, I readily confess, it requires more learning than I am master of to discern, how a *cause*, with whatever hard name it may be distinguished, can be discovered which hath produced *no effect* at all. For, until now, I imagined that *causes* were *known* by their *effects* alone; nor have I capacity sufficient to distinguish a *cause* that has *no effect*, from *no cause* at all. For that seems to be supposing, that *something* operates

rates without doing *any thing*, for if this *prædisponent cause*, do really dispose sons to have the gout from their fathers, it must do something : and something is an *effect*. Or if it does *nothing*, by pre-disposing, then is it no cause. And these sons, whose fathers have the gout, and those whose fathers have it not, must have the same constitutions, and all of them be in the same state of acquiring that disease.

But who are these learned that have written of this *cause* which *produces no effect*? if Dr. Cadogan mean to include Aristotle, among the learned, then is the *αιτια προηγουμενη*, the model from which any thing is delineated. If Plutarch be of the number, it is the antecedent cause in the series of causation produced by fate, *το μηδεν αναιτιως γιγενεσθαι αλλω κατα τας προηγουμενας αιτιας*. Nothing is uncaused, but all things are produced, according to their antecedent causes. Celsus says, *est causa abdita, in occulto posita, quæ morbos continet*; it is the hidden cause in which diseases are contained. Before Dr. Cadogan, no learned man hath ever conceived, that the *causa proegumena* was a *causeless cause*. In fact, it hath been usually considered as the *internal cause*, when placed in contradistinction to the *causa procateretica*, which is then understood to be the *external*; but the former hath at no time been considered as a *cause which produces no effect*. Is this discovery, of such causeless causes, one of those things which were left in the task for Dr. Cadogan? and does it form one of the few rational ideas which he hath given to mankind in his dissertation.

In order to shew whether I understand the doctor, in his account of these two causes, I shall take the liberty of explaining my ideas of them ;

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and state a case. If a culprit be tried for his life, and found guilty, I take the law to be the *causa proegumena*, or *prædisponent*, which condemns him to be hanged; and then, that the *causa procatarectica*, or *active efficient cause* is either Squire Ketch, or the halter, that puts him to death. Is the *causa proegumena* without effect in this instance? the learned will, as I imagine, be of opinion that it is not.

Dr. Cadogan advances in corroborating his arguments against the inheritance of the gout, with equally unabated force of reasoning. "If it were *hereditary*, it would appear in infancy and in women, which, in general, it does not." I shall try the force of this reasoning in another instance. If *beards* were *hereditary* they would appear in infancy and in women; which, in general, they do not; are beards, therefore, not of inheritance in men?

As what I have offered may be sufficient to call in doubt that which Dr. Cadogan has said, to confirm, that the gout is not hereditary, I will still embrace the doctor's own manner of reasoning. And perhaps it may prove to be as productive of an argumentative cure and an abolition of that disease, as arising from indolence, intemperance, and vexation; as this of Dr. Cadogan's is, of its springing from hereditary causes. And if such be the result, the arthritic, both now, and forever more, will be not a little obliged to me for this enquiry. If indolence, intemperance, and vexation were the causes of the gout, that disease would necessarily be transmitted to every man who was under the influence of these causes; and he could not possibly be free from it: but this is not the case, there are many instances to the contrary; they

they are therefore not necessarily so. And, in this instance, *the causa proegumena* which causeth without an effect, is not *necessary* to be present. From this parallel mode of arguing, there is no gout which can arise from the three antecedent causes. Dr. Cadogan having, *vi et armis ratiocinandi*, driven the hereditary gout from the field of battle; and I having done the same by that which springs from indolence, intemperance, and vexation. And now it must equally follow, according to the system of Dr. Cadogan, who asserts, that the three last are the *only causes* of the gout, that there can be no such disease as the gout existing. In this place, I would gladly be informed, whether it hath ever happened that two such signal services have been performed to human kind, by any other pair of philosophers upon earth? This question I would myself answer in the negative, were it not for one reason, which is, an apprehension that Dr. Cadogan's arguments are not absolutely conclusive, and that mine must therefore stand in the same predicament. And, on this account, I fear that this plague of human kind will be still continued to our posterity, both by inheritance and our own misconduct. And here I must beg leave to say, if we compute the number of persons, who have *no gout* from indolence, intemperance, and vexation, the proportion will be found as great on this side, as on that where the gout does not descend by inheritance. "What then is all this but to pronounce a disease is acquired by indolence, intemperance, and vexation, and proving, that it is sometimes, but frequently not so? can there be a greater absurdity?" indeed I think not. This whole account and reasoning on the gout, as not being hereditary, is, as I believe, new in the matter, in energy of argument,

in conclusiveness of reasoning, and aptitude of illustration.

“Some men observing, in the circle of their acquaintance, the children of gouty parents afflicted with the gout, and often very early in life, though they are what they call temperate, conclude, not unnaturally, that the disease must be parental, and unavoidably transfused into their constitution. If this were the case, it must be for ever incurable, and the sins of the father visited upon the children, not only of three or four, but of endless generations.” Sydenham and Musgrave, by much the most perfect and most esteemed of all those who have written on the gout, whose opinions are adopted by Boerhaave, Hoffman, and all the subsequent writers on that disease, declare the gout to be both *hereditary* and *incurable*. And how comes it to pass, that because a disease is *hereditary*, that it must be *incurable*? do all the children which are born with symptoms of the venereal disease either die or remain uncured? and will not mercury, which would have cured the father of that distemper, cure the child if he have strength to support the effects of it? is there not one nation in the north, through whose families and clans, the itch hath hereditarily descended from fathers to sons, from the time of Fergus the first, to this day? and yet we see, that with a little brimstone, and on emigrating into England, where it is not considered as a mark of high blood and ancient lineage, they become as free from it as the English themselves.

But it seems as if Dr. Cadogan was aware of the feebleness of his arguments from temperance. For when the children of such parents have the gout early in life, and without that manifest cause, he says, by way of anticipation to those objections

tions that may be offered, “but here lies the error. Their idea of temperance is by no means just; for some men require a greater degree, a stricter mode of it than others, to be kept in good health.” This seems to be ingeniously intended. For, if the gout attack a temperate man, whose father had it, why then it is because he is not temperate enough. And in this manner every thing gradually diminishing to bread and water may be called intemperance: and even that too, because bread, as the doctor says, is not the wholesome thing which many people conceive it to be.” And now, by that saving clause, there is opened a postern, thro’ which the doctor may constantly escape from the arguments of the gout’s being hereditary, when it cannot be otherwise imputed to intemperance. Proofs however of this being an uninheritable disease, I am afraid, are not to be found in his dissertation. Dr. Cadogan, therefore, flies to what may be hereafter found, on examination; and deserts all argument from fact, from experience, and from the most accurate observations of his predecessors in physic, which have been already published. “I make no doubt, says he, if the lives these gouty descendants lead, were closely inquired into by *real* physicians, they would be found to commit many errors, and to sin often against nature’s law of temperance.”

But in thus referring the enquiry to *real* physicians, is not the doctor unfair? and does he not mislead those readers who may not recollect that, from the doctor’s assertion, there cannot have been, from the creation, more than one *real* physician upon earth, before he published his dissertation; and this must be himself. Is this candid, in so *liberal a practitioner*, to raise a doubt on purpose to make himself the arbitrator, and to resolve it in his own favour? *My reasons,*

that he is this isolated reality of doctorship, *are* the *doctor's own*; for no ancient physician can have *already* written sensibly on the gout; because that task was *left* for Dr. Cadogan. No modern then can have imbibed the knowledge of that disease from a fountain in which it was not contained; and no man now living can understand the gout, because from their own observations and discernment, mankind have most assuredly *never yet had a few rational ideas about it*. Dr. Cadogan, therefore, was the only *real* physician, when he wrote his dissertation. And I believe he still remains in that solitary state: for I hear of no medical disciples that he hath made.

Dr. Cadogan, after expatiating against this hereditariness in the gout, asks, "when was there a man, who, having had one fit of the rheumatism, stone, cholic, &c. however happily relieved by art for a time, had it not again and again, or something worse in the place of it, till he became a confirmed invalid, and died *long before his time*." When was there such a man? why never. The world has contained no such being since it existed; and this I will be bound to prove, notwithstanding I cannot answer to the, &c. of those diseases which are mentioned: for although many men have become as firmly invalids, as if they had been confirmed by the archbishop of Canterbury, yet it was never so confirmed, as that any man hath ever *died before he was dead*, or *before his time of dying*. I make this remark only to shew with what justice Dr. Cadogan censures those authors and physicians who make use of words without all kind of ideas, and to prove the doctor's perspicuity of style.

Dr. Cadogan now says, "if the gout be a disease of indigestion, and therefore, of our own acquiring,

quiring, we must reason very ill, or rather not reason at all, when we say it is hereditary; for surely no man will say, that indigestion is hereditary any more than intemperance." They would reason extremely ill, indeed, if they should allow the gout to be a disease of *indigestion* and *therefore of their own acquiring*; and then say *that the thing was hereditary* which they had brought *upon themselves*. But leaving out the, *therefore of their own acquiring*, they would reason right, that indigestion was hereditary, or Dr. Cadogan has reasoned very wrong, in saying it already. For what does he mean by saying, "our parents undoubtedly give us constitutions similar to their own?" does *indigestion* form no part of a gouty constitution? as to intemperance, as I apprehend it, that defect has never been deemed to arise from *corporeal*, but from *mental* imperfections. and therefore it may possibly not seem to be a total want of reasoning to say, that indigestion is hereditary, although intemperance be not.

Having in this manner examined the arguments which Dr. Cadogan has brought in support of the gout's being *not* hereditary, I shall proceed to his second, *that it is not periodical*. Dr. Cadogan says, "it is natural enough for those who believe the gout hereditary to think it also periodical, as if something innate and inherent in our constitutions produced it at certain times: but this is a great mistake; for if it were periodical it must be regularly so." I shall not presume to aver, that Dr. Cadogan is mistaken in his opinion; but I will venture to say, that Hippocrates sayeth, in his 55th aphorism, sect. 6th,* arthritics are most generally

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* Τὰ ποδαγρινὰ τε ἥρος, καὶ τε φθινοπώρῃ κινείται ὡς ἐπὶ το πολὺ.

attacked by the gout in spring and autumn. Celsus declares the same in various places. Sydenham says, it generally returns in the end of January. Musgrave, of the anomalous gout, that it returns in the autumn, and many others are of the same opinion, who have long had the gout; and so am I also, who have felt it to be periodical for two and twenty years. And I hope the doctor will not much resent my being a little attached to the opinions of his predecessors, when my own sensations are so strongly a collateral evidence of that which they deliver. The argument, that *if it were periodical it must be regularly so*, does not appear to me to be so perfectly conclusive, as it is peremptory. Let us examine these ideas of *periodical* and *regular*. Roses, in general, blow in June. If the same tree blossomed on the first of that month last year, and on the twentieth this, is the blowing of the rose not periodical? because it did not blossom on both times regularly on the same day? The gout comes in one year, in the months of February and September; in the next, in March and October, is the gout, therefore, not periodical, because the months are not regularly the same? I should fancy, in this sense, which is the only one in which the gout was ever said to be periodical, that this disease is justly entitled to that denomination.

To this Dr. Cadogan adds, “the only periodical disease I know is the intermittent fever, which, till it be disturbed by the bark or any other febrifuge, is as regular, as a good clock.” Is this periodical regularity a proof of a disease being hereditary? Then the ague is hereditary, and the intail which in the gout was cut off by Dr. Cadogan, where it was always thought to reside, is now fixed on intermittents, where it was never found

to exist before, and the benefit which hath been bestowed on us by one discovery, is taken off by another. A plague on those damned Jesuits who discovered the bark, and brought it into old England. Will there never be an end to their malicious plotting against us Protestants? they have long plotted to disturb our regular government, in church and state; but there the success was little: and now it plainly appears, there hath long been a plot in the bark, to disturb the regularity of our intermittent fevers. And this they have accomplished, for otherwise the intermittents would have regularly gone on until they had ended in that *relief* and *respite*, which are so necessary for introducing the powers of life and nature, and of which the doctor speaks in the preceding pages. These intermittents which are as regular as a clock, must be of great use in poor families, in the country, where they want to know the time of the day and have no other method of measuring it. And therefore, the *disturbing* them with the bark must be a horrid plot against the regularity of such people.

Before these confounded Jesuits introduced the bark, disturbed the regularity of these intermittents, and even expelled them by force out of their lawful tenements, they frequently, and regularly went on till the person, like a bad clock, stood still and moved no more. They sometimes rose to continual fevers, and cured their *intermission* by those means. Or they sunk into *tertians* and *quartans*; and after a long duration, the patients were cured by the universal doctor who cures all human complaints. But since the Jesuits have introduced this plot of the bark to disturb the regularity of our intermittent fevers, *quotidian* agues are prevented from rising into continual fevers, and from sinking into *tertians* and

and *quartans*. And these are the fatal effects which these jesuitical disturbers have brought upon the protestant cause, by this plot of the bark against the regularity of intermittents. But these villains are now found out, and I make no doubt but the bark will be legislatively expelled from these kingdoms, as the Jesuits have been from France, Spain and Portugal, for their other misdeeds, which many people are persuaded have not been more disturbing to the several states than their bark has been to intermittents in these protestant countries. And I humbly hope Dr. Cadogan will not remain unrewarded for this salutary discovery. The doctor having now vanquished all the ancient and modern physicians, and as fairly proved that the gout is *not* periodical as he hath, that it is *not* hereditary, is triumphantly advanced to his third assertion, that it is *not* incurable. "I come now, says he, to shew the gout is not incurable. If by the cure of it be meant the administering a pill or a powder, or medicine of any kind to do it, it is, and ever will be incurable." Dr. Le Fevre being dead, this matter of dispute affects not him. I leave it, therefore, to be debated between Dr. Cadogan and whoever shall think proper to defend the honour of his pill, powder, or other medicine. And as the affair may not be very speedily decided, I shall not detain my readers till the end of the dispute, but proceed in my enquiry. "This method of cure, says Dr. Cadogan, has been long and often attempted in vain, from the origin of physic to this day; from the first quack to the present." for this reason I wish Dr. Cadogan better success in prescribing his regimen. Opposite to the word quack, a friend of mine most invidiously inserted a marginal note, from *Æsculapius* to Cadogan; but

but this I instantly erased with a resolution never to disclose it to the most intimate of my acquaintance.

Dr. Cadogan continues, "Indeed there is a glaring absurdity, at first sight, that must stop any man of common sense, who has the least insight into nature, or knowledge of the human frame : for if the gout be the necessary effect of intemperance, as I hope to shew very evidently that it is, a medicine to cure, it must be something that will enable a man to bear the daily intemperance of his future life unhurt; by the gout or any other disease ; that is, something given now that will take away the effect of a future cause."

Now, if the gout be not the *necessary* effect of intemperance, then what is become of the doctor's reasoning. And if it have, of *necessity*, that effect, whence did it happen that St. Evremond and a few thousand others, have lived in daily *intemperance* without having it? can *necessity* do otherwise than produce its effects. On this account it does not appear that *common sense* and *the least insight into nature* must stop at the first sight as at an absurdity; that medicine can cure the gout, I mean, from the doctor's reasoning on *necessity*. For where is the *necessity* that a man must lead a future life of intemperance, should the gout be cured by a medicine? and as to the difficulty which arises from its being given *now* to take away the effect of a *future* cause, that I believe, is no more to be done by medicine than by temperance; for if it do not take away the *future* cause, the *effect* will certainly follow it. And it is the *cause* which is intended to be removed by medicine. And, methinks, it seems not a little new and original, that Dr. Cadogan should oppose the belief, that a medicine can take away the effects of a *future* cause, when he has already
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said that, men may throw away the future health of their lives.

The same difficulty seems to attend both of these passages, and both of them must either be alike, true or false, and, this, I leave to the decision of my readers, first requesting them to observe, the newness, inconsistency of opinion, energy of argument, and conclusiveness of reasoning which are contained in the doctor's preceding passage.

However, if Dr. Cadogan, who is peculiarly nice in preserving his words and his ideas happily connected, does mean by a *future life*, a *life after* the present, then, indeed, I do not see how a medicine to be taken in *this world*, can prevent a disease that does not proceed but from a *cause in the other*. In that case, as the doctor says, as well might a medicine be given *now* to prevent a man's breaking his leg, or his neck, *seven years* hence." But he need not have procrastinated his fractures to so great a distance ; for if medicine can prevent it, for the next moment, it can do it for ever.

The doctor then says, " one would think the utmost that any rational man could expect from medicine, was, that it should have power to relieve present disorders, leaving the body quite free, without pretending to insure it from future injuries." I am not afraid to pronounce that the man would be truly irrational who expected more, and, if his present disorders *be so removed* and his body left *quite free* by medicine, is not that a cure? If all the symptoms of the venereal malady be removed, and the body left quite free from them, does any one expect that his physician shall insure him from the contagion of repeated acts of venery? Physicians would then be *underwriters* to

to insure the health of their patients from future injuries, as houses are insured from fire, and ships from tempests, which I have hitherto conceived to be a separate employment. However, I hope that offices will be speedily established and policies opened for the insurance of men from the returns of their disorders, always provided, that the health, of all such men who are insured, shall be and remain under the care of Dr. Cadogan. And when I can find that the gout has been cured, by his regimen, so as not to return, whilst his regimen is observed, I will underwrite all the policies that can be offered, and at very reasonable premiums. And this first hint of mine will, I doubt not, be very acceptable to those gaming insurers in the city, who have renounced the laudable pursuits of merchandise, and become gamblers of a new kind, and betted large sums upon the sex of a French plenipotentiary.

Dr. Cadogan now advances to shew the fallacy of mankind in their reasoning on the gout? “here lies the error, says he; men think the gout to be something latent in the body now, which once well eradicated, would never return, not suspecting it to be no more than each day’s indigestion, accumulated to a certain pitch, that as long as the vigour of life lasts, always brings on every fit, which once well over, the man has no more gout, nor seeds of gout in him, than he who never had it; and if he did not breed it again, most certainly would never have it again.”

If we reason by analogy, it does not appear, that the error is so very great, in thinking that the gout, when once *well eradicated will never return*. It is generally conceived that when plants are once well eradicated they will never return; but that,
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if they do return, they have not been well eradicated ; some straggling root, or seed, latent in the ground, has been the cause of their regerminating. Something like this seems to be included in Dr. Cadogan's account of the gout's return. Indigestion is allowed to be one of the seeds of the gout. This, the doctor says, is every day accumulated to a certain pitch, which brings on every fit. May not the stream that feeds a pond be so encreased that the aperture which lets off the water, in the common way, may not be sufficient to keep it from overflowing ? but then, when it overflows, and the stream returns to its usual degree of current, I do not conceive that the pond, which is daily supplied by fresh waters, can, by this overflow be rendered quite free from water. And if the stream of indigestion run daily into the blood, in what manner can a person be freed intirely from it, by its overflowing at the feet ? However, this may be determined, the last stroke of the doctor's is absolutely indisputable ; that if the man does *not* breed the gout again, he will *never* have it again. And he were a devil that denied that assertion.

Does not, this breeding without seed, seem to be a revival of the ancient philosophy of equivocal generation, which Dr. Cadogan so much explodes ? The doctor's proof, that the seeds of the gout are not more in a man, after a fit of the gout, than in one, who has never had it, is this, " that the gout has been often cured by a milk diet, which, as long as it lasted, has *generally* kept the patient free." Now I apprehend that this effect of a milk diet, *when the gout does not return*, is no more a proof of the man's having no seeds of that disease in him, than that, *when it does return, these seeds*
still

still remain. And it has been observed, by Willes and Sydenham, that some arthritics have received some signal alleviations of their pain, by a milk diet, continued for three or four months; but that others, under the same regimen, were rendered still more afflicted by it. Has not Dr. Cadogan, in this place, derived an absolute conclusion from partial premises?

Dr. Cadogan proceeds, "though I think the gout incurable by medicine, it is so far from being incurable in its nature, that I am firmly persuaded it may be more easily and more perfectly cured than almost any other disease; and this is another strong argument, the gout is not hereditary." What these powers are, which Dr. Cadogan may have discovered, by lifting up his eyes to nature, and by consulting her book, to induce him to believe, that the gout is curable, I know not; though I allow the old woman to be a most excellent physician. And, in this opinion, I am in company with Hippocrates, who advises no attempt to be made of that kind; with Sydenham, Musgrave, and all others of former estimation. And as I am not informed of these powers by the doctor, I cannot agree, that, because *he is persuaded* that the gout may be more easily and more perfectly cured, than almost any other disease, that I ought to be *persuaded* of it also. Nor do I see how the doctor's *persuasion*, of this curableness in the nature of the gout, is a proof that *he can cure it by diet*; or in what manner such *persuasion* can be another *strong argument* that proves it *not hereditary*. I hope my readers have not neglected, although I have for some time, to remark what a variety of novelty appears in those parts of the dissertation, which have been lately examined. It is kind in the doctor to give us his reason for the
above

above mode of thinking. "My reason is, says he, that it is confessedly a disease of the strongest and best constitution, relieving itself by throwing off harsh and bad humours from the vitals, and out of the blood, upon the extremities, where they do least harm to the powers and principles of life and health."

Now, if the gout be a disease of the best constitution, which generates harsh and bad humours, I would much rather have a constitution that is not quite so good. For, with much exercise, and more temperance than Dr. Cadogan allows in his rules for diet, I have had it more than twenty years, and I have always been under a continual mistake; that my constitution was not so good as are that of men who have lived healthily, without this proof of the best constitution. For I have experimentally found, that altho' the humour be thrown out on the extremities, it does really do great harm to the powers and principles of life and health. The doctor's argumentation continues, "and as those humours can be nothing more than the daily accumulation of indigestion." What more, in the name of Hippocrates, would he have, than a daily accumulation of indigestion? "and if a man can live, without breeding constantly this indigested acrimony, he may most undoubtedly live free, not only from the gout, but every other chronic disease also." *If*; aye that's the rub that makes the gout of so long life. But *if* a man cannot live without breeding this acrimony, what then? why then see what Dr. Cadogan says in the succeeding passage, "and that he may live so, not in a perpetual state of mortification and self-denial, but in the truest, most philosophic luxury, I shall endeavour to prove, I hope, to the satisfaction of all thinking, reasonable

ble men." And here, I think, it would have been a happy opportunity, by way of a medical history of corroborating causes, to have written the life of that practical philosopher, St. Evremond. However, as the undertaking is truly meritorious, and a mixture of ease, comfort, and luxury, in any mode, must be exquisitely satisfactory to all-thinking gouty men, heaven send the doctor a happy issue to his endeavours.

When a physician undertakes to perform a task so most sincerely as this is done; it is not to be wondered at, if the vehemence of his zeal sometimes hurries him on, a little too precipitately, after the object he pursues. Dr. Cadogan, therefore, pauses a while and recollects himself. "I have said, says he, that indolence, intemperance, and vexation, are the original causes of all, or most of our chronic diseases." It is true, indeed doctor, you have already said both of them several times, and now you say, "perhaps, a few accidents must be excepted, to which the strongest and healthiest are most liable, and the effects of fevers not happily ended; and which I except, to avoid all cavil and dispute with the men of art." But unhappily for Dr. Cadogan, these exceptions have not obviated all cause of dispute and cavil. For, if accidents, to which the strongest and healthiest are most liable, be the cause of some chronic diseases, why then exercise, temperance, and peace of mind, may not be such infallible cures for these accidental distempers. And many people would be glad to know, whether *death*, which is one effect of a fever, *not happily ended*, be included in the number of those few accidents, which are productive of chronic diseases?

In evidence of this Dr. Cadogan brings his belief for an irresistible argument. "I believe, says

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he, to every considerate man, whose eyes have been opened, so as to give him the least insight to nature, the truth of this proposition will be so self-evident, that he must instantly perceive it." The eyes of those considerate men must be devilish close, indeed, which would not allow them the *least insight* into nature, without opening. However, "every invalid that will be candid enough to do it, may fairly trace all his complaints up to one or other of these causes." The devil is in him if he can't. Now the doctor has added fevers not happily ended, and the chapter of accidents to the bargain, which being causes undefined, he hath left himself the right of applying all that can exist. This puts me in mind of some old reasons for drinking.

*There are, my friend, if right I think
But five good reasons why I drink ;
Good wine, a friend, or being dry ;
Or least I should be, by and by, }
Or any other reason why.*

And now after this task hath been left for Dr. Cadogan, and none of mankind have possessed, until he benignly gave them, *a few rational ideas of chronic diseases*, it comes out at last that both the doctor and all these ignorant physicians, coincide exactly in their opinions of the causes of all chronic diseases. For, if the chapter of accidents be added to indolence, intemperance, and vexation, are not all other causes included ? and this was not an artless invention in the doctor to become of the same opinion with all others, in order to obviate all cavil and dispute with the men of art.

However, it seems to Dr. Cadogan that although the truth of this proposition will be self-evident to every

every considerate man, whose eyes have been opened so as to give him the least insight into nature, "yet, that it may require some explanation to the generality of mankind, who are so short-sighted, as never to look back or forward far beyond the ken of their nose; and therefore, never see either distant causes or effects." Now it does not appear how these *short-sighted men* should need an explanation more than those considerate men, who have the *least* insight into nature, unless, indeed, these men are *so confoundedly short-sighted*, that they have only an insight into nature, something *less* than the *least*.

Be that as it may, Dr. Cadogan has made the greatest discovery in anatomy that has been revealed since that of the circulation of the blood, at least. He hath discovered that the *nose of man is endued with eye-sight*; for the word *ken* does only signify *reach of sight*. Now, when this hath been so happily performed, which is no less than giving sight to the blind, will any man be so much an infidel as not to believe, that the doctor can cure all chronic diseases. And, are not all these passages, which succeed my last observation, brimful of new consistency of opinion, new energy of arguments, new conclusiveness of reasoning, new perspicuity of style, and new marks of no common practitioner?

But let us examine the conduct of these short-sighted men. "When they are sick they seldom enquire more than for some cold or surfeit of yesterday, and to some such trifling cause impute diseases that last for life." These fellows are, indeed, most abominably *short-sighted*; for let the cause of the disease be imputable to what it may, they ought, most certainly, when they are sick, to en-

quire for some *physician*, some *apothecary*, and some *nurse*, and not for some *cold* or a *surfeit*, which can neither prescribe, make up the medicine, nor administer it.

Dr. Cadogan now gives us a very excellent description of such men as “are ignorant of the ways of nature, in the production and the support of animals, their false ideas of diseases in general, and then adds, that this makes them so solicitous to know the name of their complaints, which once ascertained, they think the remedy not far off.” These men must be, to the full, as ignorant as the former are short-sighted in thinking, that, because the *name* of a thing is *present*, that the *thing itself* is *not far off*. However, I could sincerely wish, that this were true; for then I would see China and Japan, with all other places that I liked in a very little time: for, whether the naming them could carry me to these places, or bring these places to me, the event would be the same. But I suspect that, according to the laws of bodies attracting each other, the least and lightest must move to the big and heavy; and therefore, that it is I who must travel and not either of the antecedent empires.

The following apostrophe, by the doctor, is uttered with a pathos exceedingly pitiful. “Poor men! is not the gout sufficiently distinguished.” Yes, in truth, more than sufficient, according to my sensations. “But where is the remedy?” the devil take me if I know. “Certainly not in the precarious skill of prescribing doctors, or the secrets of ignorant and enterprizing quacks.” I am of your opinion, doctor. From this I am led to conclude, that Dr. Cadogan does *never prescribe*. Because, if he does, he seems to have written this differ-

dissertation to explode the persuasion of his own skill, by giving it the epithet of *precarious*. As to the quacks, I leave them and the doctor to settle that matter as they may.

Dr. Cadogan now asserts, "that there exists no difference in constitutions, but of strong and weak." Here he seems to have forgotten his *causa proegumena*, or he is become of my opinion, that *it does nothing* by predisposing; for he says, "the most delicate frames may be as healthy as the strongest, for the same reason that a squirrel is as healthy as an elephant." I ask the doctor's pardon for not coinciding in opinion with him, from the illustration of this similitude. For, to make the comparison just, he should not have taken his image from two different creatures, but from two of the same species, and have said, that an elephant, of a *most delicate* frame, is as healthy as one of the strongest: and not have drawn his simile from two different creatures, in which there is little more of analogy, than that of walking upon four feet. However, I freely own that this comparison is new in aptitude of illustration.

These things being premised, Dr. Cadogan then declares, "it is possible for men to live to great age without any disease at all." St. Evremond did it in excess of voluptuousness, "for many have lived to upwards of an hundred with uninterrupted health." I dare say, even to the number of one in a million, which forms a reasonable conclusion, that all men may so long live, if Dr. Cadogan be their physician, and they religiously observe his *directions*; for he cannot be a *prescribing* doctor, without a kind of self-condemnation.

Nothing is more remarkable, in this dissertation on the gout, than the *sibi constans* of the author;

for although in the preceding page but one, Dr. Cadogan hath added accidents and fevers not happily ended, as joint confederates with his triple alliance, in order to obviate all cavil and dispute with the men of art. In this place he resumes his old opinion and contemns all the cavils and disputes of the men of art: for now again he intrepidly pronounces, “not from the natural defects of our constitution, therefore, but the abuse of them proceed *all* our chronic diseases; that is, from indolence, intemperance and vexation.” And now it again appears, that the causes of chronic distempers, which were included under the chapter of accidents, and in fevers not happily ended, are become *no causes at all*; for as these three causes constitute the whole power which is productive of *all* chronic diseases, I humbly apprehend there can be *nothing* left to be performed by accidents. And thus the latter have been introduced into the company of the former, in order to have their insignificancy exposed, and then to be dismissed with contempt.

Such being the introductory part of the dissertation, Dr. Cadogan says, “let us now proceed to what must be the necessary effect of one or more of these causes acting daily upon the body: whether, in the strongest frames, it must not be the gout; in weaker, rheumatism, cholic, stone, palsy, &c. or any, or all, of the nervous and hysterical class.” In this place I cannot but remark, that Dr. Cadogan has lain himself under a *necessity* of doing what seems to be not the least difficulty of the task, which was left for him, and which he says he will perform most sincerely. Because he seems already to have disproved what he is now setting forward to evince. For I apprehend, under the head of the practical
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philosopher, he hath already convinced his readers, that a man of the greatest indolence, intemperance, and some considerable vexation did naturally live till he was ninety-two years old in perfect health and happiness. However, if Dr. Cadogan's friends shall excuse him that small escape, of introducing his *brochure* with a most conspicuous instance of the error on which his whole doctrine is founded there may be discovered no inconsiderable number of living men, of great age, of great indulgence, of great intemperance and of great vexation, who have never been afflicted with any of those disorders, which Dr. Cadogan asserts are the *necessary* effects of one or more of them. Now, to prove that these effects do *necessarily* happen from causes, which do *not* produce such effects in great numbers of individuals, is, in my opinion, one part of the doctor's task, which, had it been undertaken by me, I should have been greatly rejoiced to have found its having been taken up and discussed by some other previous writer. And if it were not, upon the word of an author, I would have suffered it to remain quietly inurned, and have wished that, peace be to its manes. For I am sorely afraid, that Dr. Cadogan has conjured up an apparition, by his presumption, which he may not be enabled to lay by his learning.

The last paragraph of the first section of the dissertation begins in this manner, "first, of indolence, by which I do not mean *insensibility*," says Dr. Cadogan: nor any one else that ever I knew; "but an *inactive habit of life*." So does all the world; and there, indeed, I do readily allow, that the doctor "does take the word in the general common sense it is now used." And I apprehend if this precaution of defining words had been preserved

ved in all those, which the author of the dissertation hath inserted, in that work, no small degree of *its present merit* had been totally wanting.

S E C T I O N. III.

I Am now come to examine those few rational ideas on indolence, which were unknown to mankind, until Dr. Cadogan was most graciously pleased to present them with that knowledge. The Renowned Hudibras was

*Great on the bench, great in the saddle,
And could as well bind o'er as swaddle.*

So is the author of the dissertation equally great in moral as in physical philosophy. And of this he gives us an illustrious instance in the very commencement of his section on indolence. "It seems says he, to have been the design of providence, that all men should labour every one for himself." In this place methinks Dr. Cadogan might have spoken a little more positively than *it seems* to have been the design of providence; because he might have found, from tolerable good authority, in the third chapter of Genesis, and the nineteenth verse. "*In the sweat of thy face shalt thou eat bread until thou return unto the ground.*" But, to confess the truth, if Dr. Cadogan hath made his observation on the people of England, he has rather been too modest in the words, *it seems*; for, in fact, there *seemeth* to be no such thing in this kingdom. But that the honest, the industrious, and the poor are doomed

doomed to labour for the deceitful, the idle, and the rich.

Dr. Cadogan pursues this moral sentiment, "that some are rich enough to purchase the strength and activity of others, is a mere accident with regard to individuals." Dr. Cadogan hath here cut off the entail of estates, as well as of the gout; otherwise I should think that estates which necessarily descend by inheritance are not mere *accidents* with regard to individuals. In this instance, however, he says, "the care of providence appears to be no otherwise concerned than having unequally distributed those powers and abilities, by which active and fiery spirits rise uppermost, to preserve the harmony of subordination, without which society could never exist."

Now, if riches be the powers and abilities by which the active and fiery spirits rise uppermost, to preserve the harmony of subordination, without which society could never exist, I do not penetrate into Dr. Cadogan's reasons for calling them *mere accidents*, with regard to individuals. For *it seems*, I think, that the *existence of society* was one of the *cares of providence*, and not the least interesting to man. And therefore, that which produces the *harmony of subordination*, without which society could never have existed, can hardly be a *mere accident* to individuals.

I am in doubt also whether these powers and abilities of riches were given by providence for the preceding purposes, of raising the active and fiery spirits uppermost in society; because these kinds of spirits are not the most likely to preserve the harmony of subordination, without which society can never exist. For, are they not a little too apt to rise into tyranny, which destroys all subordination? on these

these accounts I am somewhat fearful that Dr. Cadogan, in lifting up his eyes to nature and consulting her book of morals, open for the perusal, conviction, and benefit of all mankind, has met with the like success which he had when he consulted her book of physics. For it has been observed by ethic philosophers, that wisdom, courage, strength, and elocution have been the natural powers and abilities bestowed by providence on individuals, for the sake of constituting the harmony of subordination in society, and not riches ; which being obtruded by man, have rendered the existence of society inexpressibly more devoid of that harmony of subordination, which is most beneficial to national communities,

Dr. Cadogan now describes in what manner “the rich and great forget the first principle in nature ; that they renounce all bodily labour as unworthy their condition, and are either too lazy or too inattentive to substitute exercise instead of it. Thus sacrificing health to indulgence and dignity, they do not enjoy those advantages their superior station gives them ; but, in happiness, fall often below the labouring hind.” I have quoted this passage to shew, that when Dr. Cadogan condescends to write, in the old way, like other men, his observations carry with them good sense.

“ I remember, says the doctor, to have seen an ingenious little book, upon the origin of evil, in which labour is considered as a great evil.” He then adds, “ the agreeable author *must* surely mean, when it is excessive, and urged on to the wearing and wasting the body ; for, in general, it is the first principle of good to mankind, and to none more than the laborious themselves.” Whether this author must surely mean this or not, I shall leave

leave to be determined by Mr. Soames Jennings. But there is one part of Dr. Cadogan's observation with which I can almost ascertain that *he* will coincide. That if labour be the first principle of good to mankind, that it can be to none more so than to those who observe that principle; the laborious themselves. Otherwise it would be the first instance of a principle of *good* which did not produce the most to those who made the *most* use of it.

Dr. Cadogan then asks this question, "does he mean that it would be better for us all, did the earth spontaneously bring forth her fruits in such abundance, that we should no more labour nor contend for them than we do for the air, and have nothing to do but bask in ease and riot in enjoyment?" I have, indeed, a sort of a suspicion, this may be included in his meaning; because it seems extremely probable, that he did not anticipate, in imagination, the deplorable state to which the world would be reduced by this spontaneity of production, which induces the doctor to say, "if so, I can by no means agree with him; for soon, very soon, in such a state of things, there would not be one healthy man upon earth, and the whole race must quickly perish."

This would, indeed, be a terrible effect of the deprivation of labour. But let me examine, from what exists at present, whether such would probably be the future consequences, if the earth spontaneously produced her fruits in such abundance as to render the toil of man useless. Dr. Cadogan allows, those rich and great have renounced at bodily labour, and are too lazy to substitute exercise in its place. Now these people do not most certainly preserve their healths and lives by means of labour,

bour, and whether the earth spontaneously produce its fruits, or they are produced by the toil of others, it makes no difference, to the health and lives of those who toil not, neither do they spin; and yet Solomon, in all his glory, was not arrayed like one of them. Unless, indeed, it be in labour, as in the law, *qui facit per alterum facit per se*; and the servant's labour makes the master's blood run briskly, promotes his secretions, whets his appetite, preserves his health, and continues his life. But I am persuaded that things are not so ordered; for, were they so, could an object of such importance have escaped Dr. Cadogan, or have remained unrecommended in his dissertation, as a succedaneum to exercise for those rich and great men who renounce the thing itself? This direction they would most assuredly observe, and their servants would not then stand idle in their halls; but be kept to ample labour, in order to preserve the lives of these great good subjects, and support their health in the laudable employment of eating, drinking, wenching, gaming, and a few other occupations of equal honour in themselves, and of as much utility to the public.

Now, as these rich, great and indolent folks have existed as long as we have any accounts from history, have propagated and enjoyed health and long life; and disease and depopulation seem not to be much encreased, nor more to die, at present, than in ancient times, I should presume, that if all the inhabitants of the globe were in the same situation, of basking at ease and rioting in enjoyment from the spontaniety of production in the earth, that effects similar to the preceding would be the consequence of such an abolition of labour; and that, in such a state of things, it would *not soon,*
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and very soon happen, that there would not be *one* healthy man upon the earth ; nor that the whole race must *quickly* perish. For I have not heard that providence hath granted patents to the rich and idle to enjoy health and longevity, exclusive of the less rich and indigent.

Dr. Cadogan, having pronounced the fate of all mankind, should labour be abolished as an evil, expresses his apprehensions that even this abolition would be of the greatest prejudices were it practicable. “ Indeed, says he, I am afraid, notwithstanding all our unreasonable and unphilosophical complainings, the utmost art of man cannot remove the least evil out of nature, without taking with it all the good.” I agree with the doctor, that unreasonable and unphilosophical complainings are not likely to withstand the producing of any effect of nature ; but then, I do not perceive why he has preferred these complaints to those which are according to reason and philosophy, as more withstanding.

May there not be some reason to doubt also, whether *all the good* in nature would be removed by the demolition of the *least* evil. Suppose that the art of man could prevent the conflagration of cities, the destruction of earthquakes, the inundation of the sea, the ravages of tempests, which are not the least evils, does the doctor think there would be nothing good remaining among us ? The art of man hath, in a great measure, rescinded by inoculation the evils arising from the small pox. Quarantines and lines drawn round infected places have prevented the spreading of pestilential diseases. Have these instances of the wit of man lessened the good things of nature ? Besides, we are commanded by Christ himself to pray, *deliver us from evil*. Must we abstain

stain from that prayer, and implore that our evils may be continued through danger of losing all the good, if they be taken from us? besides, Dr. Cadogan says, at the entrance of the *brochure* itself, "that every man is the real author of all or most of his own miseries." Cannot the least of these be removed without taking all the good? This, I think, is a most marvellous exhibition of the new way in consistency of opinion, energy of argument, and conclusiveness of reasoning.

It is the happiness of Dr. Cadogan, and of his readers, that he improves in his sentiments as he advances in his subject. For, says he, "I think the author of this ingenious little book, had been nearer the truth, had he put indolence in its stead, which is a source of great evil." Now, in this place, I cannot refrain from thinking, and expressing myself in the style of the Robinhood president, that this metaphysical *militates* against the medical philosophy of Dr. Cadogan. For if indolence be an evil, and that the least evil cannot be removed out of nature, without taking all the good, why, in the name of goodness, did he publish his dissertation? is not the publication of that work apparently intended to abolish this evil of indolence? is it not, on that account, in fact, an endeavour to deprive us of all our good? but heaven be thanked, the insidiousness of this design, to subvert all human happiness, hath been by me revealed: and the mischief will, I trust, be happily prevented. Men will now neglect these new doctrines and continue to live in a manner not to be divested of all the good in nature, which would otherwise arise from the abolition of indolence. And in this place I hope without deserving, more than doth Dr. Cadogan himself, the charge of assuming too much,

I may pretend to have attempted to be of some little service to the felicity of my fellow-creatures, of the human race. May not the antecedent passage be justly deemed a novelty, as containing evident marks of coming from no common practitioner in morality.

I am now come to the theory of those things on which, according to the doctor, the health of mankind depends. "It is, says he, upon the minutest and almost invisible parts of the body our best health, strength and spirits depend. These fine parts, commonly called capillaries, or little pipes, or tubes, the extended continuation of the larger blood vessels, through which the finest parts of the blood must necessarily pass, not only to keep these channels free and open, but also that the particles of the blood may in their passage, be attenuated, broken and rubbed into globules perfectly smooth and round, and easily divisible into still less and less, till they escape the sight, assisted even by the microscope, which gives ocular demonstration of this most amazingly miraculous circulation."

Another writer would, in this place, appear to be inconsistent with himself. But this is the new way of writing, and as it hath been much in vogue, on that account, I only make this remark, to shew its excellence. For, here the best health, strength and spirits are said to depend on the solids, which the doctor hath several times supposed to depend on the fluids, of the vitiating of which indigestion is the cause; and certainly, as all animal sustenance is imparted by the fluids, and these capillary vessels are repaired by the nutriment which these fluids bring, on these the preceding qualities do more immediately depend.

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At the same time, if this description of the circulation be intended for a human creature, it is either a new discovery, or not coincident with the accounts of preceding anatomists. The latter have not found that these little tubes are continuations of the larger blood vessels. They assert, that the arteries, which carry the blood from the heart, are not extended into continuations and capillary tubes, for the passage of the finest parts of the blood, till they are rubbed into less and less and escape the sight; but that they terminate in anastomoses formed at these places, in which the arteries deliver the blood to be taken into the veins. This does not consist of an artery terminating in a vein, or one vessel going gradually off from the end of another, but in what is called a plexus of the artery, consisting of innumerable branches, all communicating with each other. From the sides of these the veins take their rise in great numbers. And this mechanism hath been justly admired for the infinite wisdom which appears in this formation of innumerable little vessels of intercommunications, by which the obstructions, that might otherwise arrive from a continuation of one tube, are so signally prevented.

Nor do these smaller vessels let nothing pass but the finest parts of the blood. For, if they did, what would become of the more gross? can they return against the stream in the arteries? I fancy not. Do they remain at the anastomoses? No. For the blood in the veins is not more fine than that in the arteries.

And that the particles of the blood are attenuated in their passage, broken and rubbed into globules, perfectly smooth and round, and easily divisible into still less and less, is, I am apprehensive,

five, an error also; the particles of all substances in a uniform fluid are in a state of solution; and no experiment hath hitherto proved, that, in such a state, they can ever be rubbed into another form." And would not the particles which rub each other, in such a manner, abrade the vessels also in which they move; and destroy the frame of that body which they were made to preserve? This notion of Dr. Cadogan's seems to arise from an inattention to the nature and form of these globules of the red blood. They consist of six particles, held together by a peculiar attraction, which operates in uniting them into globules; and rubbing the particles less, if it can mean any thing, can be nothing otherwise than a division of these six particles.

But the most singular part of this account is, "that the particles are divisible into still less and less, till *they escape the sight*, assisted even by the microscope;" and then, being *out of sight*, "give ocular demonstration of this most amazingly minute circulation." In this manner things which pass off at the ends of these tubes, and are *no longer visible*, must be seen *to return* by other vessels; or, how can they be known to be in circulation? and this is, indeed, both new and amazing, in physiology.

But in this place I ask pardon for my presumption in opposing the opinion of other anatomists to that of Dr. Cadogan: for, he says "I have observed myself, and any curious, patient man may see with a good microscope, in the pellucid membrane of any living animal this surprizing minuteness." And this is the first time that it has been discovered that *curiosity* and *patience* were medicines that helped the eye-sight. And now I discover by what inducements Dr. Cadogan has been

led into the adoption of this mode of circulation: He has taken it from a frog's foot or a fish's tail: but believe me the analogy of the circulations of the blood in man and in such animals, is not a sufficient rock on which to lay a solid foundation; for concluding, that what passes in a frog is necessarily included in a human being. And these are my reasons for delivering myself in this manner. The blood of a human person is composed of almost equal parts of red blood and serum; whereas that of frogs and little fishes is not in the proportion of one red particle to a thousand white, or of *crassamentum* to the *serum*.

On this account I will incur no farther displeasure by denying that the red globules in the blood of a frog or a fish, "were seen like a number of little red solid balls, pushing one another on till they come to the extremity or ramification of the vessel, where it divides into two, still less." But I will venture to say that this seeing of little solid red balls, did not arise from their being the only particles which were contained in these vessels; but from their fewness in number, from being red, and from being surrounded with a ferous fluid, equally pellucid with the membrane itself, and therefore indiscernable; because the fluid and the membrane are undistinguishable by colour.

But I humbly presume, that, in the human blood, no such phenomenon, of red globules pushing one another like pellets in a pop-gun, hath been, or ever will be observed: or that it can exist. Because, wherever the crassamentum, or red blood, hath been found, there as constantly the serum is known to accompany it. Another mistake is this also, that red globules lose their colour by being divided. Hitherto no such phenomenon

menon hath been discovered. These red globules being happily conducted to the extremities of the vessels, Dr. Cadogan says, " There the first globule, stopping a little, and recoiling, is pushed on again till it divides into two, and losing its red colour, passes on in the smaller pipes fitted only to receive the serum, which undergoes the same circulation till it be refined into lymph, and this into the finer fluids, which being thus prepared, escape into a subtilty beyond all possible observation."

In this account of the circulation and preparation of the human fluids, there are new things revealed to the curious in physiology. First of all, the pushing and recoiling of a single red globule; next the division into two, and thereby losing its red colour. But there seems to be some reason to doubt in this affair, for the anastomoses of the arteries are formed of plexus, and not divided into ramifications. The blood also is red in the veins, into which it cannot come, of that colour, did it pass those vessels of which Dr. Cadogan speaks. One drop of the crassamentum also, or red blood, being mixed with a thousand times that quantity of tepid water imparts a very perceptible red to the whole fluid, as Gaubius relates in his pathology. And therefore it is humbly presumed that these globules, being divided into their whole possible division, and preserving their colour, cannot lose it in the body by being divided into two only.

Harvey hath been justly celebrated, for his discovery of the circulation of the blood, from the ventricles of the heart, through the arteries to their extremities, when passing into the veins it returns by them to be recirculated by the same organs; and by these means this circulating movement is sustained and continued. In this consisted

the discovery of that illustrious physician: in this manner it has been received by succeeding anatomists, and there it rested: But Dr. Cadogan hath unhappily *not* discovered the two new systems of vessels, for two different circulations: the first for the serum, wherein, as he says, "it undergoes the same circulation till it be refined into lymph." And this, I presume, is refined by a circulation in a third set of vessels, into still finer fluids, which being thus prepared, "escape into a subtilty beyond all possible observation." This account hath Doctor Warner adopted from Dr. James's dictionary under the word arthritis: and this work, as the author himself is said to report, is very well written until you come to letter A. But if Dr. Cadogan found it there, he hath forgotten it, and it is nevertheless new in him. He might see it in the frog's foot, or in the fish's tail, although they escape into a *subtilty beyond all possible observation*. The circulation of the blood was seen *out of sight*. Why may not a subtilty of fluids be discovered that is beyond all possible observation? besides these circulations and vessels which are now so bountifully added by Dr. Cadogan to the human body, all the old lumber of the glands, which have been hitherto supposed to be of some use in the various secretions of an animal, are discovered to be of *no use* at all. And, I make no doubt, that could a proper person be found who had philosophy enough to verify this discovery by experiment on himself, and to permit some skilful surgeon to extirpate the liver, pancreas, kidneys, salivary and cuticular glands, under the direction of Dr. Cadogan, that he would survive the operation and find no want of these parts. For these, it should seem, nature formed, through

ignorance, in her first work, and before she was mistress of her business.

Such are the amazingly minute circulations which an adept may deliver to the world; who concludes that the human body contains all these phenomena; because he has seen things out of sight in a frog's foot, or in a fish's tail, as the doctor did, his eye-sight being improved by *curiosity* and *patience*, assisted with a *good microscope*.

Such being the fluids and the vessels, employed in circulating them, Dr. Cadogan is now so kind as to tell us, what is necessary to be added by ourselves, to keep these powers in continual movement. He says, "now the strength of the heart and arteries alone is not sufficient to keep up and perpetuate this motion through the capillaries; but requires the assistance and joint force of all the muscles of the body; to act by intervals, compress the veins, and accelerate the circulation of the whole mass of blood; in order to force and clear those pipes, and to triturate, cribrate and purify the fluid passing through, forming every particle of it into a perfect globule, which is the form all the atoms of matter must take from much attrition."

I take this passage to be rather *too replete with novelty*. And had Dr. Cadogan been but a slender œconomist in publishing his discoveries; there are sufficient in this sentence to have *decoramented* a very considerable volume in physiology. The first of these new things is, that sedentary people have no circulations of their blood; because it is *impossible* the heart and arteries can perpetuate this motion through the capillaries, through which the blood must pass, according to Dr. Cadogan. If this be the case, either there are no sedentary people alive, and

then there is an eternal farewell to indolence, as the cause of chronic diseases. Or, these sedentary people can live without the assistance of the muscles of the body to propel and accelerate the circulation of the whole mass of blood; and then exercise may follow indolence and leave the world as soon as it pleases. Or, lastly; those people who *live* a sedentary course of life, are all dead; because the circulation of the blood is no longer continued in them, or they can live without it.

I do not recollect, but that may be my fault, that any anatomist hath hitherto said, that the joint force of all the muscles of the body is required to act by intervals, to propel and accelerate the circulation of the blood. Dr. Cadogan seems to have forgotten, or hath thought fit to reject, the former doctrine, that the blood returned to the heart by the veins; and as the propelling power is in the heart and arteries, that the circulation must be retarded by compressing the veins; and I suspect the arteries may, in some degree, suffer a like impediment. Nor does it appear from analogy in any hydraulic machine, that a fluid can be kept in continual motion by a power that acts by intervals. It is not so in a pump; for stop the moving power, and the water runs no longer. In the human body either the powers, contained in the heart and arteries are sufficient to circulate the blood, or they are not. If they are, they can need no assistance of the muscles. If they are not sufficient of themselves, then, when they are unassisted by these muscles, why is not this circulation suspended? yet, I think, that this is not the consequence of being fast asleep for a whole night: or being confined to a bed for a twelvemonth: which are tolerable experiments, that a man may enjoy a circulation

culatation without this muscular assistance. For I apprehend that it is not yet discovered, that a man can sleep, as a snake in the winter, without the motion of the heart, and recover in the morning, as the reptile does, in the spring, into life and motion.

But these revelations are contemptible, when compared to this which follows. For Dr. Cadogan hath disclosed the secret, that the human body contains a *grist-mill*, a *bolting-mill*, and a refiner's *still*, with this difference only, that instead of grinding solids into meal, and then bolting it into bran and flour, these mills do *grind fluids* into finer fluids, and separate the larger from the less by *sifting*; and then they are put into the *still* to be *refined* into the *purest spirits*. The effect of these operations is not less new and marvellous than are the machines themselves. It forms every particle into a perfect globule, which is the form that all the *atoms* must take from much attrition. If Dr. Cadogan says the *atoms must* be ground to a perfect roundness, why then, to be sure, these *atoms must* obey him. And then, provided the doctor will lend me his *curiosity* and his *patience* to mend my eye-sight, for my own qualities of that kind do not assist me, together with the use of his microscope, if I can discern these rotundities, I will heartily embrace, and strenuously propagate his doctrine. In the mean while I shall *not* hold myself in suspense concerning this new discovery.

Atoms have been hitherto unanimously considered as *physically indivisible*. Now, how a particle, which *cannot be divided*, can have the *angular parts rubbed off*, or *made round*, is somewhat more than I can comprehend. Unless, indeed, from *atoms something* may be rubbed off, and yet the *whole* remain, which is not to be effected in the *larger parts* of

matter. I take this last passage of the dissertation to be almost the most happy exhibition of the various novelties which are mentioned in the introduction to this enquiry, to say nothing of its being a most persuasive evidence of Dr. Cadogan's annexing ideas to his words with incomparable precision. Notwithstanding these mills and the still do their work so perfectly well, they want a frequent repair; and then it is "that the little vessels will, by their natural elasticity, close up into fibres, or be obstructed by rough angular parts, sticking in them and stopping all passage, numberless evils of the chronic kind, especially all nervous diseases owe their origin to this cause alone." Now, if the doctor means, by the little vessels, the lymphatics, they are not hitherto known to be elastic; and I hope I am not obliged to believe, that any effects, good or evil, can arise from a power which does not exist. Next it does not seem easy to comprehend how the shape of a particle, which may be less, can prevent its passage in a tube where another passes that may be bigger; but by what curiosity, patience, eye-sight and microscope, have the atoms, which compose a fluid, been discovered to be of different shapes? And, methinks the nerves should have been proved to be hollow, and that they contain a fluid before it had been so peremptorily pronounced, that especially nervous diseases are caused by obstructions in them: which things have not yet been done. And as to the removing of these numberless evils, innumerable as they may be, I humbly conceive, according to Dr. Cadogan's moral system, they ought to remain; or otherwise, all the good in nature must go along with them: so that to send all the good things of life into banishment, together with innumerable evils, would reduce

duce the world to a worse state by curing diseases, than by letting them alone. For as things are at present some people do enjoy a mixture of good and evil. Whereas, under the doctor's philosophy, there could nothing remain of good. Because a cure of one evil being performed, there could result no good from it, that very cure necessarily becoming the *removal* of all the *good* in nature out of the world. Until these novelties be explained, I hope I shall not be deemed of incorrigible obstinacy, if I adhere to the old system.

Dr. Cadogan now appeals to the experience and observation of other men on this head of obstruction, and says, "accordingly we see most of those, who have lived for any time in a state of indolence, grow emaciated and pale, by the drying up of these fine vessels." If Dr. Cadogan, by the word *we*, intends to include *me* in the number, I beg to be excused; because I have observed the contrary. And that instead of these vessels being dried into fibres, or obstructed in the indolent, that it happens incomparably more frequent in those who labour, and use abundant exercise. And it seems to me also a new thought, that indolence makes men lean. For as far as I have observed, the contrary is the effect of all animals. They are kept lean by labour, and fattened by indolence; I fancy a painter would rather adopt this emaciated figure to express avarice than indolence.

To his praise be it spoken, Dr. Cadogan is not so unmerciful as to allow the indolent no fat with their lean. For he says, "if they happen to be of a lax habit, having a good appetite and nothing to vex them, they may be loaded with fat; but they grow pale withall, many of these fine pipes being
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nevertheless closed up; so that they appear bloated and their fat unwholesome, having much less blood in their veins than thinner people." Thus the same cause both emaciates and fattens, as the satyr blew hot and cold with the same breath. But I think, growing fat was never deemed till now a symptom of ill health in man or beast. And if I, and many others are not greatly mistaken, we see a greater number of fat people with fresh colour in their cheeks, and more health and wholsomeness than lean, whatever be the quantity of blood which they may have in their veins, or however their fine pipes may be stuck together.

"Thus, says Dr. Cadogan, inactivity first forms obstructions in those exquisitely fine parts, upon which the health and vigour both of body and mind depend entirely, and lays the foundation of many diseases to come; which other concomitant circumstances, such as violent colds, excess of any kind, infection from without, or a particular disposition of the body within, make often fatal to many in this habit of life and which the industrious and active never feel." I shall say nothing of the body in this place. But, is there no ground for suspecting that the health and vigour of the mind may not *entirely* depend on these obstructions which are formed by inactivity? Has no one person fallen into irretrievable insanity, and dejection of soul, from the sudden deaths of husbands, wives, parents, and children, and even from pecuniary losses? have joy and grief, love, hatred, ambition, superstition, and other passions so little influence on the human mind, that the Doctor was obliged to seek resource from inactivity as the only thing on which the vigour and the health of it must *entirely* depend? hath he consulted Dr. Monro?

So much for the mind, and now I return to the body. It seems that activity has not only the admirable effect of precluding all chronical distempers, but of preventing *infection* from without. And hence it follows, that the industrious and active are never infected with the plague, small and great pox, and other contagious diseases, as every man must see, to be sure, who lifts up his eyes to nature, and consults her book, open as it lies, for the perusal, conviction and benefit of all. I wish Dr. Cadogan had quoted the page, or at least the chapter in this book, in which it is said, that *activity prevents infection*. I have turned over no small number of the leaves in this large volume, and I have not been able to find any such thing.

In this rapid career of dissertation, going on with such laudable effect, Dr. Cadogan stops short, to ask a civil question. "Now I would ask any reasonable person, capable of considering this operation of nature, with the least glimmering of philosophy, or even the attention of common sense; and most assuredly it concerns every man to consider it well, whether he can conceive it possible to substitute any medicine to be swallowed that shall act upon the blood and vessels like the joint force of all the muscles of the body acting and re-acting occasionally in a regular course of moderate daily labour or exercise." Why really, in answer to this, if I may be so bold as to speak my mind, I don't believe the muscles of the body have the power of acting and re-acting which Dr. Cadogan assigns them, for the reasons which I have already given; and, therefore, I shall offer nothing in vindication of what medicine can do. But, however, I foresee that Dr. Cadogan hath the means of escaping the force of all I have said, or can say, by declaring,
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that I am without the least glimmering of philosophy or attention of common sense, and therefore I cannot be a competent judge of the matter. And thus *he* saves his system and *I* am demolished.

Things being thus far advanced, the doctor says, "unless this can be done I will venture to pronounce that there is no such thing as a lasting cure, either for the gout or any other chronical disease." The lord have mercy on the diseased then, say I. The doctor proceeds, by way of dialogue, "yes sir, says a common practitioner, cordials, volatiles, bracers, strengtheners, &c. will do this, will keep up an increased circulation.—Possibly they may, for a few hours, by doing mischief for many days; but their action soon subsides, and the stimulus ceases: they must, therefore, be repeated and repeated for life. Woe be to him that takes them, and to him that leaves them off, unless it be done with good judgement." And here I cannot but observe, that this denunciation of *woe* is truly dreadful; if they do as much mischief by being left off, as by being taken, who can escape this woe? why, thank god, times are not so bad; there is *one real physician* of good judgement, *mon pere est le plus grand medecin du monde*. Their mode of acting is this, "while they act, they coagulate the juices and corrupt the whole mass of blood, and when omitted, the patient must feel all the languors and horrors of a crapulary fever after repeated debauch; and must have recourse to them again and again, like a dram-drinker, who cannot bear his existence but in a state of intoxication." Now it does not appear from reason or experience that these cordials, bracers, strengtheners, can keep up an encreased circulation by coagulating and corrupting the blood; because the bark, which comes
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under the denomination of the two last, is the best remedy yet known to prevent the fatal effects of mortifications, and because cordials have the like tendency. And as to Volatiles, Boerhaave, the doctor's master, hath given many experiments to prove that these dissolve the blood. But the most extraordinary phænomenon is, that those who take them, and whose blood is corrupted, and whose vessels are obstructed, are obliged to have recourse to them again for new corruption and new obstructions, in order to coagulate the blood and thereby to support the circulation and their existence by intoxication, lest the leaving of them off should be fatal. If this be not new, the doctor himself shall write the next enquiry on his own works for me; I shall proceed no farther.

From all these things Dr. Cadogan draws this aphorism. "No art can *never* come up to nature, in this most salutary of all her operations." Which, if two negatives make an affirmative, is, that all that the doctor has said is an error; and he positively pronounces that art can come up to nature. And this is new also in the conclusiveness of reasoning.

Dr. Cadogan now gives us a brilliant description of what will be the effects of activity: "Our sprightly vigour and alacrity of health, felt and enjoyed in an active course of life, our zest in appetite, and refreshment after eating, which sated luxury seeks in vain from art, is owing wholly to new blood made every day from fresh food, prepared and distributed by the joint action of all the parts of the body." And then, he truly says, "that no man can have these delightful sensations, who lives two days with the same blood; but must be languid and spiritless." Does Dr. Cadogan mean
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that the whole mass must be changed in two days? if he does, he is mistaken; for both Sanctorius and Keil have statically proved, that health is perfectly preserved by evacuations equal to what is eaten and drunk, in each day, which certainly in two days is not the weight of all the blood and juices. From thence I draw this inference, that the blood must not be totally changed in two days, to preserve health; because nature hath formed us otherwise than to want it. And thus it is no less true, that the blood must remain the same, than that it must *not*; for although the addition may destroy the metaphysical idea of sameness, it does not the natural, in which that which remains of a fluid is supposed to be the same, although the other part be new and adventitious.

Dr. Cadogan then draws this aphorism, “to introduce new juices the old must be first thrown off, or there will be no room; there will be too great a plethora or fullness, the first cause of disease in many cases.” Sanctorius is of another opinion, grounded on the only experiments which can truly determine this matter. For he says, in the 56th aphorism of his 1st. section. “The body does not perspire alike at all times. For, in the first five hours after eating, about a pound will be lost by perspiration; in the next seven hours about three pounds, and from the twelfth to the sixteenth, hardly half a pound.” Hence it appears, that *new juices* must be introduced to throw off *the old*; for nature does not make the evacuation to admit the juices, but introduces sustenance to expel the perspirable matter and keeps up a constant supply of new before the evacuation be remarkably begun to seern the old.

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And now for another effect of inactivity. "In this the old humours pass off so slowly, the perspiration is so inconsiderable, that there is no void to be filled, consequently by degrees the appetite, which is the last thing that decays, that is, the desire of supply must daily diminish, and, at last, be totally lost." I have known some of these inactive men live a long while before they come to this state. Why then if the appetite be the *last thing which decays*, is not the man dead when *it is totally gone*? or after the *last thing* is gone, are there still *others* remaining to *go after it*? I know of no instance of this kind but one, which was that of more last dying words of Dr. Baxter. However, thanks be to Dr. Cadogan, things are not quite so bad as they may appear to men, who take a philosopher's meaning from the words he utters, and who do not enter into the spirit of what they *do not express*. This was once the case of a bishop of Chester, who, when Johnson, the dancing master, published his Hurlo Thrumbo, sent for the author, and told him he did not understand his farce. My lord, says Johnson, perfectly to understand a piece of literature, it must be read in the same spirit with which it was composed. How may that be done Mr. Johnson? With a fiddle under your left ear, my lord. If I knew the spirit of the doctor's composing, I would faithfully observe it in this enquiry. For, says Dr. Cadogan, "after the last thing that decays is totally lost, art can do wonders; it can procure evacuations, we can bleed, purge and vomit." Moliere's doctor did this, but then the patient was living. However, "to do any good with these the doctor says, the case must be recent, before the humours are vitiated by too long a stay in the body, which will be the case very soon; for they are all

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in a perishable state, which makes the daily renewal so essentially necessary to health." Now I leave the world to determine, from this description of the patient's state, whether he be dead or not. The humours must be *in a perishable state*, that of a dead body, and the case must be *recent*, perhaps, not more than three hours after his death, because the humours will be vitiated by a longer stay in the body. And this, I apprehend, is as long as a dead body can be safely left without beginning to bleed, purge and vomit away; and then if they operate and revive the patient, who shall have the face to say the doctor has not done wonders?

Notwithstanding this characteristical description of death, it immediately turns out that these wonder-working applications do no great wonders. For, "these artificial evacuations discharge all alike the new, the middle, and the old juices; that is the chyle, the blood, the serum, and the lymph; and, by this indiscriminate action, make strange confusions in those that remain." If the doctor had not enumerated the juices, I should never have understood what were the middle juices, having at no time seen in any physiologist or anatomist any thing under the denomination of a middle juice in the human body. And now I am at a loss to know which is the middle juice of four. If I take the blood, then there is one on the left side, and two are on the right. If I take the serum, then are there two on the left side, and one only is on the right. And how to make a middle juice of four, where one thing must be between two equal parts to constitute a middle, hang me if I know. The eleventh or twelfth edition of the dissertation, or the great circle itself, may possibly settle that matter. Now, if Dr. Cadogan had not determined to
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be always new, and would, like his predecessors and contemporaries, have been contented to have suffered the serum to make part of the blood, why then these juices would have been but *three*, and, at a second, or a third guess, one might have hit on the *middle one*.

Hence it appears that the carrying off of all the good juices, and leaving the remaining in strange confusion, are the wonders which art can do in the hands of no common practitioner. And, in this place, I imagine may be aptly applied some part of the first aphorism of Hippocrates. Life is short, art long, occasion quick, experiment dangerous, and judgement difficult. For if, I have mistaken the doctor's meaning, in supposing the patient dead, before these wonders are to be begun, I am sure no man can think him alive after they are finished. I am in some doubt whether there be a member of the college of physicians, within any conceivable distance of doing such wonderful things. Sir William Browne, the father of physic, is the most likely. For, added to his great skill in medicine, he is a most unequalled poet, an unrivalled translator, and an incomparable critic on the works of Horace. Besides these excellencies, what man hath so fine a hand at a dead coachman's wig, or so certain a receipt for the preventing of false conceptions in women.

Notwithstanding art may do these wonders. Dr. Cadogan tells us, "in nature's course," that is, whilst the patient is alive, "there is a constant, regular transmutation and succession from one state to another; that is, from chyle into blood, and blood into serum, serum into lymph, and so on, till they are all in their turn, having done their office in various shapes, elaborated and ground to

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such a minute subtilty and fineness, that, like wave impelling wave, they successively pass off in the vapour of insensible perspiration." Thus nature sets her two *mills* and her *still* to work, *tritirates* the blood, *cribrates* it into serum, *refines* it into lymph by distillation and off it flies in the vapour of insensible perspiration. But, by the doctor's permission, some parts of these fluids, so ground, do really pass by the salival glands, and others by the kidneys. But the simile, by its being thus happily applied to those operations, makes ample amends for these small omissions. For this series of ground, cribrated, distilled, transmuted fluids flies off in insensible vapour, like one wave impelling another wave, in which there is no change of the fluid, and which do not fly off in vapour sensible or insensible. I desire this similitude may be remarked as very new in aptitude of illustration.

Dr. Cadogan now describes the ill effects of a state of indolence, "by retaining the fluids in the body too long, they grow putrid, acrimonious and hurtful many ways." And, hence he says, "the breath and perspiration what there is of it occasionally, of indolent people, is never sweet; and hence, in jails, where these noxious vapours are collected and condensed, from crowded wretches languishing in indolence, very malignant and pestilential fevers arise." This passage appears to be a revelation of things unknown before, which are, that these indolent people are so confoundedly lazy, that they will not take the pains either to breathe or perspire, but *occasionally*. Nature hath, indeed, so contrived it that the deficiency of the perspirable matter may be in some degree supplied by the urinary evacuation, and the person live some time; but if, in this *occasional breathing*, the intervals should be

too long continued, I know of no method which nature hath constituted to preserve the patient from dying. The indolent in high life will, I hope, therefore correct this error, and not become their own assassins by excess of laziness, if it be but to sweeten their breath and perspiration. And I desire them to take notice, that this description of wretches languishing in indolence, is, by the doctor's account, as applicable to them as to felons; and that a jail in this respect is the true tipe of an Opera-house, Play-house, Rout-house, Carlisle-house, Ranelagh and Pantheon, where the noxious vapours are collected and condensed, from poxes, king's evil, leprosy, and many other distempers equally malignant. And that, consequently next winter, very pestilential fevers must arise from such people being crowded into these places.

The next paragraph of the dissertation contains a very new account of the effects of blisters. "Perpetual blisters have been often thought, and sometimes found, to be serviceable, in draining off some of the superfluous juices, before they are much corrupted; and making, by a faint resemblance of nature's action, a little more room for new. And it is for this reason they do any good at all, by encreasing the general circulation and forcing off a few of those humours that had circulated too long in the body and were becoming acrid." Now, in this place, will not every unilluminated reader imagine, that these blisters *are serviceable in draining off some of the superfluous juices to make a little more room for new?* if they should so imagine, mind what the doctor says, "they will be mistaken; for the quantity they discharge is so trifling, that there could be no physiology, nor even common sense in supposing *the evacuation to*

be the benefit procured." Thus to suppose, that these blisters which do their *whole good*, by forcing off these humours that were becoming putrid, do, in fact, *do any good* at all by these means, is to want the knowledge of physiology, and to be void of common sense. Why then did Dr. Cadogan afford to unenlightened minds such a proof of self-condemnation by writing this passage? However, will any patient presume to know better than the doctor himself, who certainly would not have said, that blisters are only *serviceable*, in the way in which he says they are *not serviceable*, if he could not have reconciled the contradiction. I take this to be exceedingly great in several of the preceding methods of being new and ingenious.

The good effects being thus *clearly* explained, away, Dr. Cadogan has a fresh touch at bleeding, purging, and vomiting, which he again most kindly tells us, "do not do so much good by a discharge of a hundred-fold more of the humours, than the blisters by evacuation." And yet the doctor hath already said, it would be want of common sense to suppose that they produced *any* benefit by this very *evacuation*. How much *less* good, than *none at all*, can be done by this *hundred-fold* carrying off the humours by bleeding, purging and vomiting, I must leave to the author of the dissertation to inform the world. Is it not like the Irish merchant, who declared he had sold some linen for fifty pounds that was worth nothing at all, and which was not half its value.

I can meet with no physician, who hath a few rational ideas sufficient to answer the question, when I ask it. However, the doctor says, "he has known bleeding answer very well to some, especially old people, who had been long accustomed to it, whom

whom it preserved to great age." As Dr. Cadogan says, he has known this, no man, with a few rational ideas, can doubt it; and I am sure every such person will most readily agree with him in part of this which follows. "That it must be begun, in time, before the whole mass of humours be vitiated;" but whether it should be continued for life, if the humours be restored to their proper state, may admit of some doubt. And if they be not, life will not be long continued by repeated bleedings.

And now Dr. Cadogan emphatically asks, "is it not strange that men should seek and prefer these violent artificial methods to the simple, easy pleasant and constant action of nature, and chuse rather to take a vomit, or a purge, than a walk, and wear a perpetual blister, than make the least use of their limbs?" Yet, indeed, it is strange, so passing strange, that without his word for it it would never have gained credit with me, except in arthritics, whose limbs are rendered useless by disease. And these I think, do not come within the denomination of those who can *chuse* to walk or make use of their limbs.

We are now told a second time, "that indolence must inevitably lay the foundation of general disease. In the very best constitution it may be gout or rheumatism. In the weaker habits, cholic, jaundice, palsy, stone, &c. with all of the hysterical and hypochondriacal class. If *all* these diseases, together with an &c. are to be the consequence to every individual, who has not the gout or rheumatism from indolence, why then either of the latter is certainly to be preferred. But if *one* man may have a cholic, and another a jaundice, in lieu of the gout, there are not a few who would prefer a weaker to the very best constitution. Because

cholics and jaundices, as they imagine, are more easily removed than the gout; and they do not see, when an, &c. is added to the cholic, jaundice, pally and stone, that there required an enumeration of any other diseases, since that sign stands for *all the rest*.

In vain, says the doctor, "have ingenious men of reading and study, mental labour and sedentary life, who are more subject to disease in general than the gay and thoughtless, endeavoured to obviate the evil by abstinence; an excellent means of remedy in many cases, and which few practise, but true philosophers, who are not the most likely to want it. But yet, even they do not find it answer, and for the reason which I have just given, that we cannot live two days in health and spirits with the same blood." This is certainly new; it is even more new than what hath been already said by the doctor; for he hath inveighed against inattention, as the promoter of disease in men, who will not seriously consider on their health. And now, he says, the gay and thoughtless are less subject to disease than men of study and mental labour. Abstinence also is an excellent means of remedy in many cases, which few practise but true philosophers, who are not the most likely to want it. And yet, these are generally thought to be ingenious, reading, studying, mentally laborious and sedentary men. But even they do not find it answer. How should they if they are not the most likely to want it? And then the reason is, because we cannot live two days, in health and spirits, with the same blood. Hence we may learn, that Dr. Cadogan's idea of abstinence is living two days without food, and that, in many cases, it is an *excellent means of remedy*; but yet it is not *found to answer*.

But

But the reasons why this *excellent* remedy is *not found to answer* are these; “there must be a new daily supply of that ætherial part of our food called up to the brain to support its own as well as the labour of the whole body.” What this ætherial part of our food may be, I cannot find by any analysis, either of animal, vegetable, or mineral substances; and Dr. Cadogan has not blessed the world with a recital of the process by which it may be obtained. However, it must certainly be a very light food, and of easy indigestion: and there seems to be no great danger that the people will grow devilish fat on this ætherial diet. Hitherto beef and pudding have been thought, by Englishmen, to be very good food for supporting the labour of the whole body; and yet this seems rather to be *substantial* than *ætherial*.

But Dr. Cadogan explains his idea of this æther. “I mean, says he, the most elaborated, refined part of all our juices, which constantly repairs and nourishes the smallest vessels and fibres.” I never heard, till now, of the juice called æther. This seems to be a new opinion, that æther, which is supposed to be finer than air, should be a *juice* to repair and nourish the vessels and fibres of the body. I fancy the work will be but slight. But then the doctor doubts, “whether he may be allowed to call it animal spirits or not; but that is not material.” Call it what you please, doctor, but find its existence first, and then I would advise you to explain how these animal spirits, which have hitherto been destined to the work of voluntary and involuntary motion, can be constantly applied to repair and nourish the vessels and fibres of the body. This, although it be totally new, is yet connected with another novelty, which is, that this food, which

is ground, bolted, distilled, and transmuted into the several substances of chyle, blood, serum, lymph and so on, in order to make this æther, should be the ætherial part of the food itself. I wish Dr. Cadogan would inform the world, in what manner this æther may be obtained, which will so well support the labour of the body. Because the industrious poor, who labour in the fields, at the loom, and at the forge, most grievously complain that they can neither toil, nor live any longer upon air, which is almost the only food that the parliament thinks fit to allow them, or which they can purchase by their wages, at the present enormous prices of provisions.

And now we are told, “ whenever this æther fails, we must necessarily feel languor and lassitude both of body and mind.” And such I suppose will be the effect, on those who have none of this æther to eat. However, there is “ a difference that in weariness of the limbs, from much action the lees and coarser parts are thrown off also; and the first meal and first sleep soon supplies the defect.” And here is added, to the mills and still, a brewer’s vat, in which the liquor throws off the lees by fermentation, I humbly presume that in the natural orders of things, this process should have preceded the distillation. “ In mental labour, as the doctor says, the feculence remains to obstruct all appetite; there is no room, and, therefore, no call for supply; the whole man suffers and sinks.” From hence we learn that the *appetite* lies in the blood, and that the circulation of it may be *obstructed* by the feculence of mental labour, which must lie there also; or how can it cause the obstruction? but however, I find, by my own feelings, that my appetite is not obstructed by writing this enquiry, which proves, either that my mental labour is not
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great, that the feculence is carried off by study, or that the doctor is mistaken, for I want a supply; because the whole man suffers and sinks through inanition.

I am afraid, also, that there may not improbably be found some very assiduous students, in colleges and garrets, who are not so lucky as to have their appetites obstructed by the feculence of mental labour; who have rather more room in their stomachs than meat to fill them; who call for a supply, and whose whole man suffers and sinks, because they have little to eat. I fancy, therefore, that they would not be sorry that either this ætherial food were made known to them, to satisfy their hunger: or that the feculence would remain to obstruct their appetite. For, in their present state, their stomachs are between two stools; a great appetite and nothing to eat. The bell rings to dinner, and here I gladly close this section of my mental labour on the doctor's indolence.

S E C T I O N. IV.

IT is a common remark, that, in a race, the person who sets off with the greatest rapidity is the least likely to support it through the course, or to reach the goal the foremost. The *fallacy* of this observation is evinced by the author of this dissertation, into whose merits I am enquiring. For, in his preface, and in the two sections already examined, he begins like the morning sun, and continues his race with equal celerity through the whole to the conclusions of them. Mind how he perseveres in the same spirit in the beginning of his intemperance.

perance. "I come now, says he, to speak of intemperance, for indolence, blunting all our sensations, naturally leads us to intemperance." This is the first time in which I have heard that the *bluntness* of sensations ever led a man to seek the satisfaction of them. I have often known, that the *keenness* of sensation hath been the incentive to seek for intemperate things; but not the bluntness. Is not this the same as saying, the less the motive, the more the desire? hath not the doctor mistaken the pole of the hatchet for the edge. Be that as it may, "we want the whip and spur of luxury to excite our jaded appetites." But by what are these appetites *jaded*? by indolence. This seems strange; for indolence, of all things, is the most likely to have nothing to eat; and, therefore, not to want the whip and spur of luxury. We are told, however, "that there is no enduring the perpetual moping languor of indolence." Is it the *bluntness* or the *keenness* of our sensations which makes us unable to endure this languor? but it seems, "we fly to the stimulating sensualities of the table and the bottle. Friend provokes friend to exceed and accumulate one evil upon another. A joyous momentary relief is obtained, to be paid for severely soon after." What does the *bluntness* of sensation make us *fly*? should it not be the *sharpness* by which we are so much hurried to get rid of moping languor by means of stimulating sensualities? but mind how characteristically the acts of friendship are delineated. One *friend* provokes another *friend* to accumulate one evil upon another; and to obtain a joyous momentary relief by future sufferings. A plague on such friends, say I, who accumulate evils upon one another. Can't a man get enough of them himself without being compelled to seek such

such favours from his Friends. I have never heard of a scarcity of evils, whenever any one has been truly industrious to seek them. And, to say the truth, I suspect, from what I have felt myself, that, in general, they come, in sufficient abundance, without the kindness and assiduity of our friends to accumulate them upon us. But now, "the next morning our horrors increase, and, in this course; there is no *remedy* but repetition." Then let the patient persevere in the *same course*, and take *these repetitions* and he is cured. Why then does Dr. Cadogan endeavour to change the method of medication? does he propose any thing more than a cure for his patients. And thus intemperance, if it be the joint cause with indolence, in creating diseases, is, in fact, *the sole remedy* which by repetition rescinds the *cause itself*. For, I hope, Dr. Cadogan will allow that a *remedy* is a *cure*, unless he chuses to insist, that his dietetic regimen is *no remedy*; and, therefore, that *it will cure*.

Dr. Cadogan, although he hath found a full remedy for indolence, in repetitions of intemperance, seems not to have remarked this excellence in himself: but still proceeds to consider *intemperance* but as a *partial* cure. For, says he, "thus whoever is indolent is intemperate also, and partly from necessity." I wish I could know which part of *intemperance* sprung from *necessity*; because, on such a discovery, the other parts might be omitted, which, as I suppose, impede the cure. And now, it appears, "that the evils," of a partial cure, I suppose, "necessary following both these causes, often make the rich and great more wretched than the poor; and the ballance of happiness is held more equally between them; for, however other things

things may be distributed, happiness, like water, always finds its level among men."

I confess myself to have some doubts concerning this level of happiness. For example, can the man, who hath a wife and four children, who, by the sweat of his brow, earns but one shilling a day, be so happy as he who gets five? can he, with twelvpence, purchase the common necessaries of life, such as meat, bread, vegetables and small beer, for six persons, even for one reasonable meal? are they to live without house, clothes, fire, furniture, and the various other things which are necessary to life, health and cleanliness? will happiness find its level between the persons who abound, and those who are in daily want of the greatest part of all those necessaries? to say nothing of the augmentation of distress in sickness and in the other casualties of life? If happiness can find its level here, it must either be that one shilling will purchase all these things for six persons; or that men may be happy, without the common necessaries of life. But, to preserve a level of any thing which is fluid, there must be communications between the different reservoirs; and, in this instance, there are no such existing. The rich have their lakes on the tops of high places, well secured with mounds, from descending to the laborious cottager in the humble vale. To quit all simile and metaphor, men, who are strangers to the miseries of indigence, become insensible to the feelings of humanity in want. And, from sated appetites, warm houses, refreshing beds, comfortable clothes, and all things in abundance, they supinely and inhumanly conclude, that the poor can know no miseries from the depravation of all those things which are the constant possession of themselves. Hence
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hath arisen this trite and falacious philosophy, which countenances that hardness of heart, and contempt of philanthropy, which are to distinguishable in the great, the luxurious, the rich, and the easy. These, absorbed in satisfying their own excessive and unnatural desires, deny even compassion and daily bread to those, who, in every estimable quality of life, either respecting the national welfare, or that of these very obdurate individuals are incomparably more deserving. On this account, I am apprehensive, that things, being so circumstanced, "the poor can never be cured of envy, nor the rich be induced to enjoy their wealth with philanthropy, becoming men," until Dr. Cadogan hath cured the gout by his regimen. And, I am afraid that if our bodies are not more perfect, at the resurrection, than when they go to the grave, that great numbers must walk upon crutches to the last judgement; for, to that we must all come at last.

Dr. Cadogan, having in this digression bestowed upon the world the preceding novelties, is pleased to say, "before I return to my subject, I fear I must make an apology for what I am going to say, and hope no one will be offended, when I venture to say, that nine in ten of all the chronic diseases in the world, particularly the gout, owe their first rise to intemperance." That this assertion does really stand in need of an apology is very evident: and, therefore, the doctor was right in making it. But if the passage, for which the doctor has apologized, be received, by others, as by me, it will never give offence, although it may excite a smile. For, when it is recollected, that no further than in the preceding page of the dissertation, it is said, *that indolence naturally leads us to intemperance*, may it not be a cause of small simpering, at least, that

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intemperance should, nine times in ten, be the *first* rise of all the chronic diseases in the world. This I take to be a very new discovery in metaphysics; that there are two *first causes*, or that which, in causation *follows the first*, is not the *second*, but *the first*. And now, I fancy, that the doctor's apology is proved to be so necessary, that no one will be offended at it.

We are now told that, "many a good man, who piques himself upon being the most sober, regular creature alive, and never eats but of one or two plain dishes, as he calls them, nor exceeds his pint of wine, at any meal; keeps good hours and neer sleeps above eight or nine hours, may be surprised, if not affronted, to have his diseases imputed to intemperance, which he considers as a great crime. And yet is often ill, sick in his stomach, troubled with indigestion, and crippled with the gout. The case is, we judge of temperance and intemperance from our own habits, without any just idea of either. What we are used to do, and see others do, we think right, and never go up to nature for our knowledge."

That we are apt to think our own conduct right, is true enough; but that we are so indulgent to the actions of others to think them right *also*, is, I am afraid, rather contrary to what is to be generally found in men's opinions of one another. Else, whence do these censures so frequently arise on the behaviour of those around us? I fancy Dr. Cadogan forgot to go up to nature for his knowledge in that particular. However, says he, "the best way to explain what I mean, by intemperance, may be to enquire what is nature's law of temperance; and, to deviate from that, must be considered, as intemperance. And here I must beg

beg leave to observe, that temperance is a thing of which no Englishman has, or can have the least idea, if he judges from his own and his neighbour's habits. To form some notion of it, he must have been in other countries, particularly Spain, Portugal, or Italy, and observed how men live there." Now, in this place, I am not a little surprized, that the doctor has not directed all the English to visit these countries, in order to have some notion of temperance, and not to begin reading his dissertation, with an impossibility of having the least idea of this part of his subject; since he cannot obtain it by judging of his own or his neighbour's habits, without such a voyage. May it not be said, by some of those people, who have never seen the thing, that the doctor's words give no kind of idea of it, and that they have gained credit and assent entirely from the politeness of his reader.

The doctor continues, "what they, the Portuguese and others call temperance, or even good living, with us would be thought downright starving. In this view temperance is local and comparative; but what I mean, is, natural temperance, not depending upon place or custom; and we must not judge of it from countries, where a piece of bad bread and an onion, with a draught of water, is thought a tolerable meal; nor from our own, where beggars live better than the nobles of some countries, and where we riot in the choice of plenty, native and exotic, every day." This would be rare news for old England, but for a single circumstance, which will be revealed immediately. The first and most striking part of the preceding passage, is, that the Englishmen, who, two minutes since, could not have the least idea
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of what temperance is, without going to Spain, Portugal, or Italy, must *not* judge of it by what is to be found in these countries. Is not this giving a rule for our judgements, and then rescinding the application of it? which seems to be new and original. I have some doubt, also, whether the *beggars* in England do really live better than the *nobles* of any country in Europe; but of this I am sure, that our honest, industrious, and deserving labourers, in all kinds of the necessary provisions of life, do not; nor much better than those who eat bread with onion, and drink water. For, with a family, and the wages of one shilling a day, what more can he purchase for their daily food, unless a little cheese be placed in the stead of onion? And now I would gladly know of Dr. Cadogan, whether, if he himself lived near such persons, of which there are a million, at least, in this kingdom, he might not acquire a tolerable idea of temperance from his neighbour's habits, without travelling to Spain, or Portugal, for such information. And when he has answered that question, I shall desire him to acquaint me, where he found these useful people, rioting in the choice of plenty, native and exotic, every day? And now I leave my readers to guess, what is the single circumstance, which prevents the doctor's account from being such rare news to poor old England.

Thank god, we are at last arrived to Dr. Cadogan's idea of temperance. Says he, "I think there is an absolute determined temperance to be measured by every man's natural, unprovoked appetite, digestion and consumption while he continues in a good state of health and right habit of life." As this is intended to be a precise definition

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of temperance, on which our health depends, it merits a nice and particular examination. Now all absolute and determined quantities are universally allowed to be such as do not vary. For example, the length of a foot. And all the compasses by which it is measured, must then be opened exactly alike. If this *temperance be absolute and determined*, every man's appetite must then be precisely of the same size which measures it: or he must have a power of extending or lessening it, according as it is less, or larger than the absolute and determined temperance. This, as I humbly conceive it, is not the case. But that some men do eat and drink more than others, and yet digest, consume, and continue in a good state of health, and right habit of life. I should imagine, that Dr. Cadogan means, what is said by Sanctorius and Keil, that temperance is *that which varies*, according to the measure of *every man's appetite, digestion and consumption*; if he were not so extremely exact in affixing ideas to his words through his whole dissertation. However, that may be, the definition is certainly new; and it only differs from the other, by making that *moveable* which is *fixed*, and that *fixed* which is *moveable*; or, it may be, the doctor, in saying one thing, means another. There seems to be required an amazing precision in this article of *consumption*, to preserve health, which is, "that every man must throw off to the *last grain* all that he consumes."

"This, says Dr. Cadogan, is nature's law." But in what part of her code has he seen, that health is to be destroyed by a single grain of old matter retained in the body beyond the space of twenty-four hours? For, in this manner, he must be understood; since he says, that the old juices must be

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thrown

thrown off before the new can find admission into the blood.

After Dr. Cadogan hath given his opinion, "that eating, without appetite, and drinking, without thirst, or provoked to either, by incentives of any kind, form no part of temperance, he says, "indeed, I cannot allow him to be strictly temperate, who drinks any wine or strong liquor at all, unless it be medicinally, or now and then for the sake of society and good humour; but, by no means every day." And thus the *intention* of taking the wine alters its physical qualities from *hurtful* to *harmless*. Now if good humour and society can produce this effect, on one day, why not through every day in the year? Only drink for the sake of these two things and the affair is completed.

Temperance being thus defined, the doctor says, "now let us compare this simple idea of temperance with the common course of most mens lives, and observe their progress from health to sickness." If Dr. Cadogan means, that temperance is a *simple* idea, in contradistinction to a *complex* idea, I am apprehensive, that as temperance includes the ideas of all we eat, drink, digest, consume, and throw off, he must be mistaken in the use of that epithet *simple*; unless a number of ideas may form but one. But there is, indeed, *another sense* which is sometimes annexed to the word *simple*. If that be his meaning, why then, it may be safely acknowledged, that his idea of temperance is *simple* enough. And here the doctor is new in various instances of the preceding novelties.

Dr. Cadogan, in this place, exhibits a conspicuous proof of his great talents in declamation, against the evils which arise from intemperance, of which I shall select but one passage. He says,
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of an intemperate man, " he has recourse to dainties, sauces, pickles, provocatives of all sorts: These soon lose their power; and though he washes down each mouthful with a glass of wine, he can relish nothing. What is to be done?—Send for a physician. Doctor, I have lost my stomach; pray give me, says he, with great innocence and ignorance, something to give me an appetite, as if want of appetite was a disease to be cured by art." Surely this patient, whatever may be his *innocence*, is the most *ignorant* man that ever existed. What in the name of eating will he do with an *appetite* after he hath *lost his stomach* in which to put his meat? Is it not, as the doctor hints, a strange conception that *want of appetite* is a disease that can be cured *by art*, when a man hath *lost his stomach*? what a strange request is it also to have hunger restored which he hath no means of satisfying it. Rot the ignorance of the fellow; could not he have requested the doctor, by his art, to have made him a stomach before he desired him to give him an appetite? did he think the doctor could not have done it? still new and new and more new.

To the preceding is subjoined, " in vain would the physician, moved by particular friendship to the man, or that integrity he owes to all men, give him the best advice in two words, *quere sudando*." This is truly laconic; but if the patient does not understand Latin, these *two* words must be *four*, seek it by labour, as the doctor translates it, although verbally it is by *sweating*. And therefore, as the doctor is so extremely precise in his term *labour*, I suppose that *sweating by exercise* is not that which can cure the patient. And yet we shall find that *exercise* is recommended for the same purpose in this dissertation. Now I have

some doubt whether the most friendly and disinterested physician upon earth, by two, or even by four words of the best advice, or by sweating, had he all the hypocausta of the ancients in which to put his friend, can procure him an appetite after he hath *lost his stomach*.

To this is added, "he would be thought a man void of all knowledge and skill in his profession, if he did not immediately, or after a few evacuations, prescribe stomachics, bitter spicy infusions, in wine or brandy, vitriolic elixirs, bark, steel, &c." Now I should think that the man who had lost his stomach, was empty enough without evacuations; and that the physician would be thought void of all knowledge and skill in his profession, who should prescribe the antecedent medicines for such a man. But doctors differ, and Dr. Cadogan's is the new way of medication.

However, it seems that as Bayes's *Lardella*, dead in her coffin, might after all be not dead, so those persons, who have *lost their stomach*, may nevertheless have them still and *recover their appetites*. For, "by the use of these things the stomach, roused to a little extraordinary action, frees itself by discharging its crude, austere, coagulated contents into the bowels, to be thence forwarded into the blood." What, can the crude coagulated contents be discharged through the lacteals, whose apertures are invisible, by a microscope, to all those who cannot see things out of sight? "The man is freed for a time; he can eat again, and thinks all well." Has not Dr. Cadogan changed his opinion in sixteen lines, and proved, *that want of appetite can be cured by art*? Is not this author not only new, in forgetting

getting what other physicians have written, but what he writes himself?

“ But this is a short-lived delusion, if he is robust, the acrimony floating in the blood will be thrown out, and a fit of gout succeeds, if less so, rheumatism or cholic, &c. as I have already said. But let us suppose it to be the gout, which, if he bears patiently, drinking no madeira, nor brandy, to keep it out of his stomach, nature will relieve him in a certain time.” And thus it follows, that in order to be relieved by nature, the gout must be *let into the stomach*, which, if it be true, is a very good reason for drinking neither madeira, brandy, nor any other liquor to keep it out. And this is certainly new in the matter, in the manner, and in the method of cure. Be *patient* therefore ye arthritic sufferers, and let the *gout* come into your *stomachs* and quietly remain *there*, that *nature* may *relieve you* in a certain time. “ And the gouty acrimony will be concocted, and exhausted by the symptomatic fever that always attends, you will recover into health, and if assisted by judicious, mild, and soft medicines your pains might be greatly assuaged and mitigated, and you would recover sooner.”

Dr. Cadogan enriches all parts of science, and more particularly that of medicine by his new discoveries. For, who in pharmacy has, at any time heard, till now, of a *judicious* medicine? mild and softemetics, cathartics, sudorifics, diuretics, and a vast variety of others may be found in all dispensaries; but in what dispensatory shall we discover a *medicine* endowed *with thought, prudent, wise, and skilful*? Till this happy revelation these attributes of the mind have been sometimes supposed to reside in the physician. They are now *transferred to the*

physic. Great is the discovery and propitious the acquisition. For now the doctor may send the judiciousness, of his medicine into the patient's body, where it may look round, examine, and infallibly discover the cause of the disease, attack it in its citadel, and force it to surrender or to flee. But for the prescription of this remedy I think double fees should be given, one for the doctor's judgement, and the other for the *judiciousness* of the medicine. And here, as the doctor hath said of the Magnesia, *my Magnesia*, to whom the property does hardly belong, I am surprised he has not called this *my judicious medicine*, of which no man can dispute that he is the inventor.

After this the progress of such a patient is excellently described. "He returns to his former habits, quickly brings on the same round of complaints again and again, all aggravated by each return, and he less able to bear them, till he becomes a confirmed invalid and cripple for life; which, with a great deal of useless medication, and a few journeys to Bath, he drags on, in spite of all the doctors he has consulted, and the infallible quack medicines he has taken, lamenting that none have been lucky enough to hit his cure, he sinks below opium and brandy, and dies long before his time. This is the course I have lived to see many take, and believe it to be the case of more whom I have never heard of, and which any one may observe in the circle of his acquaintance."

Is it not astonishing that such a patient after such useless medication should be able to drag on, in life, in spite of *all his doctors and quacks*. I question whether Dr Cadogan's regimen might not have prevented him that trouble?

That Dr. Cadogan should see so many die *long before their time of dying* may be not impossible to him who

who hath had *ocular* demonstration of things *out of sight*. But for other physicians they unanimously aver, that they have never seen a man *dead before the time that he died*. I crave your mercy, gentle reader, Dr. Cheyne, *no common practitioner* also, hath published an account of a man, *who died before his time*, and came to life again, just as he pleased. Dr. Cheyne's patients believed his story : and why may not Dr. Cadogan's do the same ? for this is an age in which men, having renounced the belief of things that are probable, are captivated by the credulity of things impossible. And I do assure the doctor's readers, that there is great occasion for a lively faith in reading his dissertation.

Dr. Cadogan now grows a little suspicious of himself. " I believe, says he, I must here explain a little more fully what I mean, by provoking the appetite, which I take to be the general mode of intemperance among men ; for custom hath made all kinds of incentives to excess so common, that those of daily use, far from being considered in the class of intemperance, are by most people thought to be not only salutary but necessary : and they never suspect the least evil from the common decoraments of the table, salt, pepper, mustard, vinegar ; and yet, however extraordinary it may seem, I will venture to pronounce," (the doctor does venture to pronounce extraordinary things) " that excess in any of these must be doubly prejudicial to health." I should think that those men who eat the salt, pepper and vinegar as *decoraments* of the table, are not unlikely to eat the box, pot, and cruet which hold them. So keep your plate out of the way, good readers, when you have such people to dine with you. And then describing in what manner, " the doctor says, he will certainly be a healthier
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man, who is very moderate in the use of these things, than he who exceeds. They may be sometimes useful, as medicines, but can never add to the wholesomeness of our daily food." And notwithstanding they cannot add wholesomeness, within the four succeeding lines, the doctor says, "I do not mean by this to proscribe them entirely, especially salt and vinegar; but only to recommend great moderation." Now other physicians, Boerhaave particularly, have thought salt essential to the wholesomeness of food, as well as vinegar, for very obvious reasons, which shall be related hereafter. And why, even a *moderation* in things which are *not* salutary, is preferred to a *proscription*, Dr. Cadogan must explain, for I cannot.

The doctor says, "to give some weight to what I say." Is it not heavy enough without that addition? "there are whole nations in the world that have never known any of them and are healthy, strong and vigorous." But in these countries the physicians are conjurors to a man; and here we have but one who has a few rational ideas.

And now we are presented with a satirical declamation against "the wrong taste of the voluptuous, with sorrow and shame for the great, that they should understand luxury so little; and a severe reflection against cooks, who give every thing the same taste and nothing its own." I leave these gentlemen to defend themselves from the imputation of this crime which hath produced such sorrow and shame in Dr. Cadogan and none in themselves. And here again the doctor recounts "all the fatal effects of intemperance, overloaded and oppressed stomachs, foul and inflamed blood, obstructed and choaked capillary channels, hectic fevers of irritation, horrid sensations of inanition and crapula; and if nature was not so kind to stop
them

them in their career, with a painful fit of the gout, or some other illness, in which she gets a little respite, they would soon be at the end of their course."

Does there not seem to be something quite new, in nature's getting *respite by disease*? but the means of getting it are excellent. She stops these voluptuaries in their career, by throwing the gout into their feet, and then let them run and finish their course if they can. And pray now, if the doctor should drive the gout out of the world, and intemperance still remain, would not he be doing a vast deal of mischief, by taking such an instrument of respite out of the hands of nature?

We are now once more told, that men bring all these evils upon themselves, in which, by comparing pleasure to a coquet, Dr. Cadogan shews his knowledge of the female sex; and that pleasure being not infinite, and our sensations limited, they are adapted to each other. And then he says, "these men may tell me, perhaps, that I have made a mighty fine declamation against luxury and intemperance; but what is that to the purpose?" I confess, indeed, the declamation is mighty fine, and with most others I agree it is *not* much to the purpose. "They then desire not to be told of their faults, nor to hear disagreeable truths, which they know already." Why, really doctor, it is not unnatural to avert a recital of our faults. And on what account should a man desire to hear the disagreeable truths with which he is already too well acquainted? and then, in a glorious apostrophe, the doctor makes his patient ask him, "have you no art or skill to reconcile health and luxury, no remedy, no rare secret to repair and restore sensation and vigour worn to rags? no Medea's kettle to boil a-new? if not, do not describe to us a life of moderation, temperance

perance, and exercise; it is not worth having upon these terms." I like this image of sensation and vigour being, like a piece of old linen, worn to rags. But then the doctor's patients must be very unaccountable persons, indeed, who, because he hath no art nor skill, no rare secret, nor remedy, to reconcile health and luxury, nor a kettle, large enough to new boil them a whole, (for therein lies the great secret of new boiling) that therefore a life of moderation, temperance, and exercise, is not worth having upon these terms, which the doctor hath already proved, as he says, to be the truest, most philosophical luxury. But then he tells us, "he was aware of the unreasonable expectations of many, that their demands would rise high, some of them to the impossible." Very high, indeed, *to expect impossible things*. I would advise the doctor not to cure such unreasonable and undeserving persons.

"At present, says Dr. Cadogan, I am only setting forth the causes; when I come to talk of remedy, I will endeavour to convince them, that the artificial helps they expect are not in nature; but that there are in nature ways and means, by which many gouty broken constitutions, that have been despaired of, might be repaired and restored to a very desirable degree of health and enjoyment." If Dr. Cadogan be so very well skilled in ways and means of restoring broken constitutions, that have been despaired of, to a very desirable degree of health, the patriots request that the broken constitution of old Madam England may be placed under his care; for otherwise they think her case is desperate. And now the doctor thinks fit, "to say a word or two to the intemperate or mistaken in the middle class of life." The doctor never proposes to say more than a word or two, although his discourse con-

tinues

continues for ten pages. So much better is he than his promise.

The assertion is bold which begins the next paragraph, and I wish I could believe it was equally indubitable. "In England all degrees of men are furnished with the means of intemperance; and therefore it is no wonder that most men are intemperate." Now, in this place, I desire to know whether the doctor, in *all degrees* of men, includes *the greatest number* of them: this seems but a simple question. Yet if the greatest number be not excluded from the whole, I am under some suspicion that this assertion may not be orthodoxical. The greatest number of any one degree of men in England work for a shilling a day, or less. Let us now see what a single person can purchase, with that sum, out of Dr. Cadogan's bill of fare of temperance. And then we shall find whether the doctor be not mistaken, and to what degree this labourer may indulge himself in things intemperate. "First, new laid eggs." And then he tells you, how they must be cooked. There is nothing escapes his instruction, for the good of mankind. "Boiled so as not to harden the white creamy part of them." He writes to all kinds of people. "Tripe, calves-feet, chicken, partridge, rabbits, most sorts of white mild fish, such as whiting, skate, cod, turbot, &c. and all sorts of shell-fish, particularly oysters raw." I think that neither of these objects of temperance can be purchased sufficient to fill a man's belly for a shilling, excepting eggs and some of the fish on the sea coast, in some places. No room for intemperance here. However, not to be too exceptionous, let us take the next list. "Beef, veal, mutton, lamb, pork, venison, &c." now we are told in what manner they must be kept "till they are tender, and then eaten, with their own gravies, without

without any compounded sauces or pickles whatever. Instead of which "boiled or stewed vegetables and fallads of lettuce and endive may be used; and the luxury, that is not unwholesome, may be allowed, light puddings, custards, *blanc manger*, &c. and ripe fruits of all kinds and seasons." All these are within the circle of temperance, with small beer for beverage.

Let me now state the account between wages and expences of a man who labours to give dainties for the rich and great, the lazy and luxurious.

Daily expences,		s.	d.
Breakfast.	A fallad of lettuce, - - -	0	1
	oil, - - - - -	0	1
	bread, - - - - -	0	1
	small beer, a quart, - - -	0	1
Dinner.	beef, mutton, veal, or } pork, 1lb. }	0	4
	greens boiled, - - - - -	0	1
	bread, - - - - -	0	1
	small beer, a quart, - - -	0	1
Supper.	six eggs, - - - - -	0	1 $\frac{1}{2}$
	bread, - - - - -	0	1
	small beer, - - - - -	0	1
	vinegar and salt, - - - - -	0	0 $\frac{1}{2}$
Total		1	3
Wages		1	0
Daily expences three pence more than daily earnings		0	3

Is not this expence as little as the useful man who labours, for the useles, twelve hours in the day, ought to spend in procuring that food which is to sustain him? I am not ashamed to own, when I look round and consider

consider those who riot in profusion, and these who pine in penury, that my heart bleeds to think of the unequal lots of industry and idleness, of virtue and of vice. And even that sustenance this labourer cannot purchase, because his expence must exceed his daily earning by three-pence. Let the obduracy of his fellow subjects rescind his beer, and confine him to water, then are his wages and his expences exactly equal, saving that, on the day of rest, the sabbath, he hath nothing to eat. Demolish the sabbath, exclaims the master's un pitying lust of gain. Let him labour every day. All days are alike in nature; and he will earn a *comfortable living for a poor man*. Did providence primordially ordain that labour should live in want, and idleness in profusion? do the poor not stand in need of sustenance equal with the rich? what viscera are there omitted in the formation of an indigent man, which are to be found in that of the opulent and supine? what means of converting scanty meals to ample nourishment; are there in the poor which the rich do not possess? but now come commerce, agriculture, manufacture and the good of the nation, in aid to the demolition of rest and of the sabbath. These declaim that six years produce then will be equal to seven now. In this manner men would not only reduce their fellow-creatures, of the same species, to mere machines; and make them move with as little oyl as possible, but, pretending the nation's welfare, keep them in incessant movement to enrich themselves alone. And then they pronounce this is a blessed land of liberty and property. Will Dr. Cadogan now assert, that, in England, all degrees of men are furnished with the means of being intemperate.

Let me now add a wife and two children to this man's expences. For population is necessary to be supported.

supported. Can all these have wholesome and sufficient sustenance from a division of that food, which will but barely serve for *one* alone, and miserably sustain his strength in labour? Alas! the account is not completed; *he, his wife and children* must want the covering of a house, clothes, furniture, fire, candle, washing, and all that variety of other things which human nature needs for health and cleanliness. Can the same shilling, which must be spent in food purchase all these also? or must the deficiency of aliment be supplied by Dr. Cadogan's æther? let him give then the prescription how to obtain it. For certain it is, that the articles of his scale of temperance cannot be purchased by those ranks of the people, who, as he says, have the means of intemperance in their hands. A prescription by which to acquire this ætherial diet, that will support the labour of the head and hands will be infinitely more acceptable than a publication of his great circle of chronic diseases. If he will but benignly shew the indigent, where and how it may be had, and be converted into alimentary sustenance, I will pawn my soul that it shall be converted into houses, clothes, furniture, fire, candle, and every earthly conveniency; and enable the poor to live, becoming human beings, on one shilling a day. But until Dr. Cadogan will produce his æther, as food, I suspect he cannot support his assertion, that all men, in England, are possessed of the means of being intemperate. Away with all this misrepresentation of the peoples being possessed of such means; this ignorance of their real state; this insensibility to their miseries; this encouragement to further oppression; which hardness of heart and avarice in their employers have inhumanly

manly begun and propagated, and opulence in satiety hath indolently believed and looks no farther. "However, says the doctor, if there are less so in other countries, it is not that they have more virtue, but they want the means." The doctor is a true-born Briton; though he cannot defend our temperance, he supports our virtue. "For in other countries, it seems, their oppressive governments, the precarious state of property, and their superstitious religion, keep *them* so poor, that luxury is not in their power. They have, however, this advantage from their poverty, that they are much less afflicted with chronic diseases than we are." Why then, if the first words of the doctor's preface be true "that to enjoy good health is better than to command the world," are we not great losers by the reformation; for, when we kicked out popery and the whore of Babylon, we kicked out health also, and brought in protestantism, intemperance and all chronic diseases; which seems to be but a scurvy exchange. For although the word liberty be in general conjoined with protestantism, and slavery with popery, I cannot see how that conjunction can be well verified in England, since our popish ancestors did certainly obtain the great charter, which is at present the boasted bulwark of our protestant liberties.

Dr. Cadogan, in the preceding manner, having fully demonstrated his *reason*, in the medical art, is now pleased to acquaint us with his *faith* in it also. "I verily believe, says he, there are more gouty persons in England than in all the rest of Europe; a proof that good living is more universal." By the doctor's leave, I imagine, that this *assertion* should be proved to be a *fact*; before it be admitted as a *proof*. For although from what
he

he has said in this dissertation, there are reasons to believe that his faith is a true protestant faith in physic; yet I can hardly agree that, because Dr. Cadogan *believes* a thing, that therefore it is proved to *be true*. Besides, if the gout should still be hereditary, as many people think it is; why then inheritance, and not good living, may be the cause that in this country there are more gouty people than in all the other realms of Europe. The contrary of this I believe, but not that it must therefore be true.

We are now favoured with an information of those people to whom this dissertation is *not* addressed. For, says the doctor, “but not to the advocates for good living, in the middle class, do I wish to address myself—I fear they will be as incorrigible as their superiors in higher and more refined luxury.” Now I imagined all along that it was to such people in the high, middle and every class, that Dr. Cadogan was addressing himself. And, if he be not, why should he *not wish* to reclaim these incorrigible people. May not a liberal man throw away one *wish* to perform, what he *fears* he may not accomplish. And now, for those to whom the dissertation is positively addressed. “But there are some, not intemperate from choice, but example, habit, custom, mistake, not knowing their daily diet to be unwholesome and productive of their diseases; to these it may be of some use to have the unwholesome pointed out, and their choice directed to better things.” Why then, since this *brochure* is written for such alone, did not the doctor address it in a dedication to them, and tell *the plain truth*, the neglect of which he so much censures in other physicians,
that

that he does not write for the incorrigible superiors in higher and more refined luxury.

“Men of laborious occupations, who work in the open air, says the doctor, can and do bear great excesses, and much unwholesome diet, without much hurt.” And then, as a proof of their actual bearing such excesses without much hurt, the doctor says, “I never knew a sick or a gouty gardener that was not a remarkable sot.” I take that to be very new in the energy of argument and the conclusiveness of the reasoning. “Men, however, of sedentary trades and business, shopkeepers of all kinds, feel much sooner, and more heavily, the ill effects of intemperance, or mistaken choice in their meat and drink. Their first care, therefore, ought to be, not to add the diseases of intemperance to those of inactivity; but proportion what they take, as well in quantity, as in quality to their consumption. But let us see how will they do this.” How will they indeed *proportion it in quality*, doctor? “They all say they live upon plain things, and never indulge in made dishes; but they will eat heartily of a goose, or a duck, with a large quantity of sage, onion, pepper and salt, a pig, with similar preparations.” Aye, marry will they every man of them I warrant you doctor. But let us examine these ingredients. Sage hath hitherto been deemed a very salutary herb, and the foundation of an old adage

Cur moriatur homo, cui salvia crescit in horto?

Why should the human being die

When sage, the garden can supply?

Besides, if sage be not good with a goose, for shopkeepers; I have great reason to believe it is excellent for the members of both houses of parliament; speakers at the East-India-House; at the

Arts and Sciences; at Common Halls; at Robin-hood; and at other seminaries for the education of orators. For, unless this be the case, would Dr. Hill have made a tincture of that herb to preserve the faculties and to improve the powers of elocution? Ought not Dr. Cadogan, in this interdict of sage, to have made an express exception in favour of such useful men? The lords Mansfield and Camden are allowed to be no bad speakers, as times go. I have great reason to believe they eat sage with geese, ducks and pigs. I do not mean by this to insinuate; that these two noblemen can not speak, *tolerably well*, without the assistance of sage. But unless the orations of my lord, my lord, my lord,—and the lord knows how many other lords, do strongly smell of sage, as those of Demosthenes did of the lamp, what human patience can bear the listening to them? Lord Chatham, indeed, is said not to be very fond of sage, in his fauces. But then he supports his orations with crutches, which shews that the greatest orator stands in need of external helps.

When Sir Joseph Mawby gets up, and addresseth himself, to support the cause of patriotism, is there a man who beholds him that does not instantly think of a pig or a goose? and when he breathes forth his incomparable harangues, is not the whole house, touched with the odour, constantly crying sage, sage, sage, as they cry off-off-off at the theatres? the same thing happens when the aldermen Townshend and Oliver expose their patriotism and their oratory. How shall we know the state of our East-India affairs, if Sir George Colebrooke and Mr. Fitzgerald be sageless? where shall we have either a *key* or a *touchstone* of truth, if Sir James Hodges be without sage? what premiums can preserve the Arts and Sciences from dying of a consumption.

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if Sir Thomas Robinson and Mr. Ramsay shall continue speaking without the use of that plant? and will not a most profound dearth of oratory attend the Common Hall, should Captain Allen and Mr. Mascal eat no more sage with their geese? and even Bellas, the loud, the sweet, be heard and smelt no more in his particular manner of delivering himself; and all the speakers at the other schools of rhetoric become too contemptible to be listened to, should sage be interdicted to be eaten with geese, ducks, and pigs? and must patriotism and oratory die together, and the nation be deprived of their Tullys, and Demostheneses; because Dr. Cadogan is an enemy to the eating of sage with goose, duck, and pig? may heaven either mend his manner of thinking, or preserve all Englishmen from following his opinion, and thereby defend us from so irreparable a deprivation as that of sage.

And, is it not surprising that onion should be anathematized as hurtful and luxurious with goose, in this kingdom; when, with bread, Dr. Cadogan hath mentioned it as an instance, of such temperance in Portugal, as no Englishman can have the least idea. Pepper, indeed, is hot. But then, Dr. Warner says, who was excessively gouty, from experience on himself, that Chian pepper digests every thing. Change the common for the Chian pepper, the thing is done. For, certainly, a gouty habit, accustomed to the use of pepper, will not be the better for being deprived of it. And surely salt with goose, duck and pig is not unnecessary. Now, out of these four unwholesome things, three of them are manifestly otherwise. And were I not inclined to enquire into every thing with great grains of allowance, I think pepper might be supported in small quantities. And, therefore, where three things are positively good, and one only problematically

tically bad, out of four, if it be high, how can it be conceived to be unwholesome seasoning?

The doctor then asks, “do they ever eat veal without stuffing, or even a leg of mutton without caper sauce?” Never, I will be sworn; but when they are not able to get them. “If ever they eat a steak or a chop, if it is sometimes without pepper, I believe it is never without pickles, the worst of all poisons.” I am not quite of so prompt a faith as Dr. Cadogan, nor do I believe, that these tradesmen do never eat a chop or a steak without pickles: and that pickles are the *worst* of all poisons, I utterly deny. What does the doctor think of arsenic, sublimate, henbane and hemlock, and many others? besides these I shall soon shew, that Dr. Cadogan, in the subsequent pages of his *brochure*, hath himself discovered two new poisons, which, as he says, are *worse* than this which is the *worst of all*. I have a notion that a tradesman may eat more pickles, and with less danger from them, than from either of the above-mentioned poisons. Now, if all tradesman do constantly eat pickles with chops and steaks, then must these tradesmen be all dead; or poison does not kill. And, that they be not all dead, I do not affirm: but the news-papers and bills of mortality have given us no account of such sort of people dying of poison. A circumstance which, I imagine, would have been too interesting to trade to have been omitted in those daily informations for the promotion of the public welfare, and for instructing us how the nation goes on.

The ministry, however, will, I hope, rouse from their usual lethargy, and no longer sleep over the public good. For, as his majesty is happily stopped from exerting his royal prerogative in prohibiting the exportation of corn, to save his subjects from
starving

starving, so is he also from prohibiting the importation of pickles to prevent the poisoning of them, I humbly presume on that account, that it will be a vast neglect in the legislature, if such evils be not proscribed by parliament. And I think that both houses should instantly be assembled to advert to this discovery of Dr. Cadogan; and to prohibit the importation of capres, mangoes, and all pickles of foreign growth: and that the pickling of cucumber, French-beans, cabbage, walnuts, mushrooms, &c. should instantly be made felony, without benefit of clergy: or, certainly, we shall all be poisoned; and the pen of Junius will again be drawn to prove, that the king and the ministers, by the neglect of such an act, are clearly intending to destroy the whole nation, by tolerating pickled cucumbers, in order to have no more opposition from the beef steak and chop patriots. For, should this prevention of poisoning be neglected, will it not be a toleration to all oylmen to destroy the faithful subjects of his majesty, and even at a time when depopulation so rapidly encreases? and, may not this toleration of eating pickles be one great cause of depopulating the kingdom? For the toleration of the dissenters consciences hath certainly been that of destroying religion?

The doctor then tells us, "they are surpris'd that such meals should rise in their stomachs, with flatulence, sour and bitter hiccups, and eructations." To be sure, they and their friends too must be greatly surpris'd at the rising of these things in their stomachs, after they had poisoned all those who ate them: but, however, there is an antidote. For "they keep them down with a sufficient quantity of wine, or sometimes a dram, otherwise they would be troubled with them all the time of digestion."

And is not this a rare way of averting the effects of poisonous things, by keeping them down in the stomach? New in the manner of cure: Notwithstanding all this deadly account of poison, I have known many a man to proceed in a continual use of it to fourscore years, without being worse in health, and die of old age at last. And notwithstanding "these sharp; harsh, hot, inflammatory things are forced out of the stomach into the blood," there they have remained or passed off without laying the foundation of any disease whatever. Now comes another set of mistaken mortals. "There are others whose pretensions to plain diet may seem better founded: but who nevertheless eat, and are fond of things unwholesome, and are very unfit for men of sedentary lives. Such as salted and smoked flesh and fish of all kinds, hams, tongues, heavy flour puddings, toasted cheese, &c. all which are of such hard and indissoluble texture, that they never dissolve well in the stomach of a ploughman." Some of these, I am persuaded, do very seldom dissolve in the stomach of a ploughman; such as salt fish, hams and tongues; and the reason is, because they so very seldom get into them. But if bacon and heavy flour puddings, and toasted cheese, in a Welch-man's stomach particularly, do never dissolve well, it seems very singular that, being as healthy as a ploughman, should have become a proverb. And, if I am not misinformed, this anathema of toasted cheese is egregiously antipatriotic in the author of the dissertation: and may heaven defend him from the rage of the Cumbro Britons should he ever re-visit his native land.

The doctor says, "that the same salt, seasoning and smoke which harden and preserve them from putrefaction before they are eaten, keep them from dissolution

dissolution afterwards; so that they never are digested at all; nor is it possible that any good nourishment should ever come from them." And then, he adds, "the salts which keep them from dissolution, are, indeed, melted in the intestinal juices, and get into the blood, producing in the best constitutions, those tettery or scaly eruptions commonly, but very erroneously, called the scurvy, which is quite another kind of disease."

Now if the salts dissolve, which hinder the dissolution of the meat, why does not the latter dissolve, when that hindrance is gone? I fancy, on an examination of the intestinal discharge, it will be found, that no such indissoluble texture is to be found. If it be *impossible* for such food to produce *good nourishment*, what is it that makes those who eat it so strong, healthy and laborious? and if these salts produce tetter, scaly eruptions and the itch, all the world are mistaken in their opinions. For such diseases are known to be most frequent where oatmeal and vegetables are the most general diet; and least among those who live on salted meats. And the doctor may rest persuaded, "that the bad health of country people, and their children's ricketty heads and limbs, big and hard bellies," are *not only* not brought on by salt and smoked meats, but because, having nothing but vegetables to eat, *these* ferment in their stomachs into those violent acidities, which, passing into the blood, through want of animal food to correct them, prevent, by their power of dissolving the ossific matter, the bones from acquiring their natural firmness; and keep them in a soft and cartilaginous substance. Of consequence their heads, and joints do necessarily encrease, and their limbs bend under them. And that the best cure for such disorders is a regimen of animal

food, salted or unsalted, is well known. Here, I apprehend, the doctor is new in the cause of the disease in this instance of tetters and rickers.

I have great reason also to be persuaded, that salted, dried, smoked, and pickled meats have *not* only *no* bad effect in gouty stomachs: but that, on the contrary, they are beneficial. Dr. Warner relates a remarkable case of a gentleman, who was greatly alleviated in the pains, and had the intervals of the paroxysms protracted and health remarkably preserved to the age of seventy-three, by eating salt beef for dinner and supper for two or three days in the week. He mentions others, and his own experience, also, that such food is beneficial to the gouty. And I who have had the gout for twenty-two years, have found the same to be true and frequently a particular desire for salt and smoked meats: and I have received much service from them, when I perceived a peculiar uneasy sensation in my stomach, which did not proceed from hunger. And the reason for this good effect of such aliment in stomachs which generate acidities, is this. The salt, in meats, retards the fermentation, when mixed with vegetables, as it does the putrefaction of animal substances, which fresh meat does not do. And by these means, the vicious effects, which, without such food, are engendered in the stomach, are much less in quantity; and the fits of the gout less violent than when it is totally disused, or too long declined. And it is manifest also, that seamen, and those who feed the most on such salted diet, are the most conspicuously free from gouty complaints.

Besides the preceding, there is "another capital mistake many people fall into, who, in other respects, are very moderate in their diet. It is, that the flesh-meat they eat is always over done, if boil-

too

too much the juices are *lost*." Not if they eat the broth, good doctor. "If over-roasted, fried or broiled the action of the fire, continued too long, changes the mild animal flesh into something of another quality; the fat is made bitter and rancid, which fire will always do by the sweetest oyl; and the scorched outside of the lean, dry and acrimonious." If fire be applied till it make sweet oyl bitter, it must, like the vestal fire be kept eternally burning; unless, the doctor hath discovered a method of *over-roasting* and *broiling* oyl. Then, indeed, I know not what may be the issue. But frying oil will never make it bitter; for frying is but boiling oil. And now I find that Jerry Sneak is both *in* and *out* in his judgement. For, when he resolves to eat *no more fat flaps* of shoulders of mutton he is right; and when he insists on having *a bit of the brown* he is egregiously mistaken.

From the preceding premises the doctor draws this conclusion. "The less, therefore, all flesh meat undergoes the power of the fire, the milder and wholesomer it is." As if meat cannot be dressed too little, because it may be dressed too much; or that a man, to avoid the scorching of a glass-house, must run into the winter's cold of Nova Zembla?

However, the doctor "does not mean by this to recommend the customs of *Canibals* and Tartars, who eat raw flesh: or beasts of prey, that devour animals alive." I am glad to find that he does not recommend to Englishmen the actual eating of one another, as the Canibals do; because they perform the deed of metaphorically devouring one another with admirable dexterity and success, which seems to be sufficient without the other. As to the Tartars, I do not find that they do eat flesh raw. But that they dress it between their backsides and
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the horse ; which, as it effectually prevents the rancidity, bitterness and burning, I am surprized, the doctor does not recommend this method as the most effectual in preventing the mischiefs which arise from our manner of cooking. Besides, were horse-flesh heartily recommended to our young macaroni voluptuaries, the fashion might spread, and lessen the price of beef. So that the labourer might then be enabled to purchase a little of the latter. But he adds, “ it may be observed, the Tartars are free from our diseases, and the beasts amazingly strong and vigorous.” Why then does Dr. Cadogan, who condemns those physicians, that dare not to speak the plain truth to their patients, become guilty of this criminal reserve ; and not boldly pronounce, that, in order to obtain the true ends of right regimen in diet, they should eat their meat raw, at least, if not alive ? Why will he diminish the best qualities of meat by dressing it a little ? should not he have gone through stich, who goes so far ? and have totally demolished our mistakes and christian prejudices in eating.

The next thing is, “ that men, being born to devour most of the fruits and animals of the earth and water, there ought to be a certain proportion of animal and vegetable substances in his food. The animal, tending spontaneously to putrefaction, the vegetable correcting that tendency from going too far. Thus, from the due mixture of both qualities, results that neutral property, equally distant from acid as alkali, that is essentially necessary to produce good blood.” This is certainly a true observation, and is new in Dr. Cadogan, from his having not seen, or not remembered, a certain book, which I could name. However, it seems to be not a little new also, that
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the doctor should so soon forget what he himself hath said. For, if a neutral property, equally distant from acid as from alkali, be essentially necessary to produce good blood, how does it happen, that *capres* with boiled mutton, and *pickles* with chops, and steaks, are the *worst of poisons*? I durst to swear, that, from this salutary effect, of mixing these poisonous acids with flesh meat, it hath really happened, that all the tradesmen, which they killed, are still alive and healthy. I leave the doctor to reconcile his own contradiction, that *what is essentially necessary to health is the worst of poison*.

And now the doctor says, “ that the necessity of this mixture is so manifest, that whoever will observe attentively may see, whenever either of these prevails in the body, there is so strong a tendency and longing for things of the other sort, as well as pleasing sensation in the palate and stomach, when they are taken as plainly indicate the natural want.” And then, after giving instances of this truth, he adds, “ we ought to learn from all this to attend diligently to the calls of nature, and ballance the mixture with due proportion, not only that our vitals may have the less labour in preparing and making our juices fit for nourishment, but to prevent the diseases that are peculiar to the predominancy of either.” And thus it appears that *pickles*, which are the *worst of all poisons* are, at length, become necessary for the making of our *juices fit for nourishment*, and to prevent *disease*. And this, I hope, is an irrefragable instance of being new in consistency of opinion.

We are now come to this observation, “ that the error of mens diet, in every class of life, is, that the acid, crude, and austere almost always abound; not that they do not eat fresh meat enough, but
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they spoil it in the preparation and cooking, changing its animal nature into something worse than vegetable, taking off entirely all its tendency to dissolution and putrefaction by salting, smokeing, pickling, potting and preserving things, that, in their own simple nature, would soon corrupt and dissolve; but, by these preparations, are hardened and embalmed to keep for years, like mummies."

In reading this passage there arose in me a slight suspicion of the fact, whether most men's diet, in every class of life, do really consist of these salted smoked, pickled, potted, preserved things. On this account I made a pretty exact enquiry into the markets and shops of this great city; and I found, on the most moderate calculation, that there is, at least, a thousand times the quantity weekly consumed of beef, mutton, veal, lamb, pork, poultry, game and fish, to say nothing of venison and turtle, that is used of all the salted, smoked, pickled, potted, and preserved flesh-meats; unless, indeed, the salting of flesh for a few days harden it to mummy, which I think is not the case. I cannot, therefore, reconcile how the error of most mens diet, in every class of life, can consist in eating such things, which do not consist of more than one part in a thousand of the flesh-meat which they eat. Nor in what manner, from these, the acid crude and austere do so abound in their stomachs.

As this is the second or third time that Dr. Cadogan hath denounced those mischiefs, as proceeding from these kinds of meats, I was determined to ascertain the fact, by experiment, in order to see whether the nature of these meats were really changed into these *something's worse than vegetable*. I concluded that beef could not, by potting, be so hardened

hardened as mummy, without troubling myself to make an experiment: and therefore, I put pieces of ham, salted beef and pickled pork, into warm water in several vessels, and by changing the water extracted the salts. The animal substance became soft, and soon putrified, like fresh meat. In consequence of this I found that these saltings, smokings, picklings and preservings had not changed the animal nature into something worse than vegetable; but that they had absolutely preserved it, in its native tendency to dissolution and putrefaction; and that they were neither hardened nor embalmed, but as all other things are, which, by being dried, lose their softness, by evaporation, and recover it again by humidity. And, to say the truth, salt is the best preservative of softness in meat, if we take wholesomeness along with it. Because salt is continually attracting the aqueous particles from the air. And these I apprehend keep things moist.

And now I will boldly say, that the stomach will dissolve the salts, because the doctor hath already said it. And if Dr. Cadogan would be so kind as to ask his cook, whether salt beef, pickled pork, and hams will have a tendency to putrify, by being kept some time after they are boiled, she will answer him in the affirmative. And if he himself will only *once eat* ham or salt meat, &c. and look backwards not beyond the ken of his nose, when he comes from a certain place, he will find that animal food, both by nasal and ocular demonstration, hath not lost its tendency to dissolution and putrefaction, by being salted, and that nothing of the hardness of a mummy doth then remain in it.

As to the true effects of salted meat on the human body, that experiment seems to be best made
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by those who most generally are fed on it. And these are seamen, who live on little else, in long voyages. And here it seems pretty plain, that such food doth not lose its tendency to dissolution and putrefaction: For, as Dr. Codogan says, “such men, when afflicted with the scurvy, will have a most strong desire and longing for things of the other sort; and when they reach the land, will eat the first common grass, they can come at, with more avidity than a horse or an ox; and be perfectly cured by it.” Now, as the doctor does, so do all others also, apprehend that the real scurvy arises from a putrefactive cause; that these sailors have the scurvy, from eating salted meat; that such meat does dissolve and putrify; and therefore that it is not as hardened as mummy.

To this is added, “the same may be said of every kind of made dishes, the salts, spices, hot herbs and acids, with which they are seasoned and compounded, preserve and harden them, to keep for ever; the sauces and gravies they swim in, have the same effect as so much pickle.”

It is true, the *same may be said* of these and of all other things; if a physician *chuses* to say it: for there exists no law to forbid him. But *saying* a thing may not make it to be what it is *said*; *saying* and *doing* are two things. John Moody said of Sir Francis Wronghead, master can't ask stoutly too sometimes; but he canna haud it; he canna haud it. For example, should any one say, that Dr. Cadogan is mistaken in the subject on which he writes; will the doctor allow, that such a saying makes it true? I shall not wait for an answer, after having given this infallible evidence, *that saying things does not make them true.*

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As it is my rule to prefer experiment to assertion, for ascertaining the truth of all things physically examinable, I applied to a great man's cook, to know if made-dishes were *so hardened as to keep for ever*. Zounds, replied the cook, these would be *made dishes*, indeed, and well made too, that would keep for ever. This would be a great saving of money to my lord, and of great trouble to me. Pray sir, said he, be so kind as to follow me into the pantry, which I did. There, said he, are dishes made but two days since; do you see them? Yes, said I, and smell them too. Well then, said he, do you imagine that those dishes, which stink already, will keep sound for ever? But, pray where did you get this strange opinion? in Dr. Cadogan's most incomparable dissertation on the gout, said I. And will you, sir, said he, quote his authority in cookery to a cook? if he knows no more of his own profession than he does of mine, the lord help his patients. And then, by god's blessing, they may be cured. Why, sir, I have read his book, and if any one will prove him to be of the same opinion, for three whole pages, I will agree that made dishes are so hardened as to keep for ever. A plague on his faucing, pickling, potting, salting, hardening and keeping for ever, together with his reflections on our making all dishes of the same taste, and degrading the most noble of all arts. Had I the keeping of him, I would hold him tight to his own raw meat, or so pickle him, that he should never more want a second preservation. And I, said the butler, who, entered at that minute, would keep him to his small beer and water: and I fancy we should soon bring him to repentance and a better way of thinking, respecting made dishes and good wine.

I think there needs no further proof that these salted, smoked, pickled potted meats, and made dishes are, “in a *perishable* state;” and therefore, if Dr. Cadogan will only order them, not to be eaten before they are *putrid*, “they may furnish the materials of good blood, and dissolve in the stomach.”

“The nature of most chronic diseases, and their first symptoms, heartburn, as it is commonly called, plainly shew, says the doctor, the original cause to be an acid crudity, prevailing in the juices, producing coagulations, concretions and obstructions of various kinds, many may be surpris’d at this, and say, it cannot be; for, though they have these diseases, they take little or no acids: but there are many things they take that are *acescent*, that is liable to become acid, especially by the heat of the stomach. This they are not aware of; but they are, in their nature, much more prejudicial than things already sour. For, besides that people take not these in any quantity, the *acescent* never becomes sour, but by the act of fermentation, which being rais’d in the stomach, where it ought never to happen, produces strange tumults, wind, vapour, *gas*, that is, that fume arising from fermenting liquors, which has been known sometimes to kill at a stroke.” If this account of the *gas* be new, in the doctor, it must be either that he hath not read or hath forgotten a book, printed about seventeen years ago. And then after enumerating, “sweets of every kind, puddings, cakes, pastry, creams, confections, &c. every thing made of flour, especially fermented,” he comes to say, “bread, in particular, so far from being the wholesome thing many imagine, is not only unwholesome, by its *acescency*, but by the strong ferment it contains; when ever it predominates, it forces into fermentation

tation every thing capable of it, that it meets with in the stomach.

The doctor says, in this passage, that things acedcent, are more prejudicial than things already four. Bread is one of these acedcent things, and pickles are things already four, and incapable of further fermentation; and thus it fairly follows, by the doctor's logic, that bread is *worse* than the *worst* of poisons. And as this is the case with all things made of flour, I humbly apprehend all premiums for the improvement of agriculture, at least, of tillage, should be abolished by law; and the farmers and monopolizers of corn be encouraged, by act of parliament, to keep up the price of it; and tillage be permitted for exportation only, in order to demolish our enemies, by giving them good bread in plenty; and in cheapness; whilst the English labourer lives in health and fullness on æther; without having bread to eat, which is now well nigh the case. It seems strange also, that these acedcent things, which never become four but by fermentation, should produce such a world of mischief, by turning to that acidity, "when from a due mixture of its quality, with meat, which tends to putrefaction, that natural property results equally distant from acid and alkali, which is necessary to produce good blood." And now, adieu thou staff of life, thou art become rotten, and canst afford us no longer a support. And yet Celsus, who, as Bobadil says of Solomon, was a pretty fellow for his time, does really say, that bread is the most nutritious of all food.

"But the bread particularly bad, as Dr. Cadogan is afraid, is the bread of London, partly by being robbed of its bran, which, in some degree, would *soften* and correct it: but chiefly by having in it,

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besides its usual ferment, a great quantity of sour allum, most absurdly added, to make it unnaturally white." I have always heard, and do still believe, that bran is *harder* than flour; and I humbly presume, that it is quite new, that hard things should make soft ones softer. The experiment, in the note, in order to prove that bread will force into fermentation *every thing capable* of it, although in this experiment it be mixed with water *alone*, is too curious not to be enquired into.

"Whoever requires a proof of this, says Dr. Cadogan, may have it by the following experiment. Put a common toast into half a pint of water; let it stand six or eight hours near the fire, so as to be kept in the heat of the human stomach, and it will be sour as vinegar." This experiment I made, and, as the doctor says truly, "that acescents never become sour but by the act of fermentation;" I expected that phenomenon would be the first, when passing through the vinous to the acetous fermentation, it would become vinegar. No such ebullition appeared, no vinegar was produced; but the fluid, by the heat of 98 degrees, by Fahrenheit's thermometer, which is fourteen degrees hotter than the hottest day this year, was well nigh evaporated. And in this manner I was repeatedly disappointed.

Driven to this distress, I repaired to my friend, a quaker, who is reckoned an excellent chemist, and as faithful an operator, as any in England. I related to him my processes and my miscarriages, and shewed him the doctor's dissertation. Friend, said he, neighbour Cadogan hath made a small mistake in this matter. That is my opinion also, said I. Pray, what may it be? why friend said he, he hath been deceived by the allum, and the acid of the yeast, which the water hath extracted from the bread. If any water
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could remain unevaporated in an open vessel, after so long an application of so great a degree of heat; for thee knowest, that the double fermentation, which can alone make vinegar, is the work of days and not of hours, so, friend, says he, except in the single circumstance of producing vinegar, neighbour Cadogan's experiment is a good one, and performed in a masterly manner. I understood my friend, and was satisfied without further experiment.

Dr. Cadogan, having in this manner done the bread's business, returns to the seasonings, stuffings, force meats, and compound sauces, and says, "in this light," that is of bread, "most sorts of them must be considered." What a deal of poison doth mortal man devour! surely we have been all long since dead and did not know it, till Dr. Cadogan was graciously pleased to inform us of it. And here I cannot but remark how fluctuating is human science, at least, in physic. For, these very things, which within four pages before did *preserve* and *harden* made dishes like mummy, so as to keep them for ever, do now force all fermentable things into fermentation; and which fermentation hath hitherto been deemed, by all chemists, to be an act of solution. In four pages, therefore, either all these things are changed in their nature, or the doctor in his opinion, which is a strong argument of consistency. I remember another doctor, who somewhere says, that the college of physicians and the royal society have thought proper to change the places of the heart and liver. But the former change, I believe, is new.

And now come we to the bane of all; for, sayeth Dr. Cadogan, "but the greatest acescent, or rather bane of all, high or low, rich or otherwise, who-

ever they are that take it constantly, is *wine*." Wine produces more diseases than all the other causes put together." We have already seen that *pickles* are the *worst* of poison, that *bread* is still *worse*, and now we see that *wine* is *worse* than that. Where will this graduation of banefulness extend itself? surely this is new in degrees of comparison and excess of poison, and affords some of the very few rational ideas which Dr. Cadogan was in hopes of giving to mankind, which they most assuredly had not, till he undertook the task, and hath performed it so sincerely. Notwithstanding this opinion of the doctor's, Hoffman positively asserts, that he hath found *beer* more productive of the gout than *wine*. Those, who drink beer in this country, are as gouty as the wine drinkers; and cyder abundantly produces that disease, together with another which is worse, the Devonshire cholic. Shall I believe Hoffman, Huxham and my own eye-sight, or Dr. Cadogan's averment? some one must deliver me from this dilemma; for I cannot decide it. If this be true that *wine* is so mortal a bane, why, let the importation of it be prohibited, in the same act which is to be made against pickles. For surely the lords and commons will not be such confounded rogues, and fools too, as to suffer a longer importation of wine to poison themselves. For, otherwise, I am confident they will not renounce the drinking of it, on the doctor's humane assertion of its being so universally baneful. Were it nothing but the beverage of patriots and the poor, it cannot be doubted, but, in order to kill them all, and to encourage the drinking of it, they would give a large bounty on importation. For, does not every true friend to his country assert that their whole inclination is to destroy the people?

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But, to do justice to this opinion of the doctor, I apprehend that, to make this *wine* so great a *bane*, his words must be received in the literal and strictest sense, *and it must be constantly taken*. That is, from the moment men rise to the moment they go to bed. For, if it be meant only at meals, I and many others, have been acquainted with several persons who have daily drunk great quantities of this *bane*, and who lived to seventy or eighty years and upwards, in good health; and who died, at last, without the least symptom of being poisoned; to say nothing of the practical philosopher, who knew the use and value of life better than most men. However, I do allow, “with all men that wine taken to excess is hurtful.” So I do of small beer, and water too, and of all we eat and drink, whether it be beef, mutton, veal, or any thing in the scale of the doctor’s temperance. But then, I insist, that a moderate quantity of them all is good. And therefore, that wine under these terms, like every other food and potation, stands in the same predicament. And that those arthritics, who are advanced in life and have been accustomed to its daily usage, cannot quit it, but with injury to themselves, unless they substitute some more generous liquor than small beer in the place of it. And this I speak from the opinion of the best physicians, *the very best* excepted, from the experience of a sober life in myself; and from the knowledge of it in others: and, therefore, I keep to the opinion which Dr. Cadogan condemns, that “a little wine is wholesome and good for every one.”

Such being the doctor’s opinion, concerning wine, he compares those who drink wine to those who take tobacco in snuff, and boldly asserts, “that the want is equally habitual and unnatural, in both

cases. For, he says, the stomach wants wine no more than the nose does snuff. This hurts the nose only ; the other, accumulating a little indigestion every day, corrupts all the juices of the body most essentially." Does snuff hurt the nose *only*, and never get into the stomach ? and does a little wine, by daily use, corrupt even the essence of all the juices of the body ? what a set of stinking carcases are all the high and low, rich and otherwise, of this realm ? will any man believe by seeing their countenances, their activity, their chearfulness, and every symptom of health, that their bodies do contain no other thing than juices, all of which are *most essentially corrupted* ? I think I need not declare how great my opinion is of Dr. Cadogan ; however, on this occasion, I shall heartily ask his pardon and continue to confide in my nose, rather than in the doctor's philosophical assertion. And, as I find by experience, that these corrupted people do not stink, I confess my diffidence, at least, of the corrupted state of their juices, and of these terrible things which the doctor ascribes to the use of wine ; just remarking once more, that the doctor says, the act of *fermentation* is that of *hardening* the substances in the stomach.

The mischiefs being pronounced, the doctor says, " whatever, therefore, the advocates for a little wine, every day, may think or argue in favour of it, they are most undoubtedly in a very great error ; and it were certainly much better and safer to drink a bottle, and get a little merry, once a week, drinking water only or small beer, at all other times, in which interval nature might totally subdue it, and recover entirely." And yet, in contradiction to this, I will venture to say, the doctor is most undoubtedly in a very great error ;

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for, if wine be the universal *bane*, the doctor says it is, it is a poison of a very extraordinary nature. Let us compare it with other *banes*. Ratbane, for example; will a little of that taken every day do more mischief than a large dose taken at once? opiates are *banes*, will it be safer to take a large dose on a Monday morning than small ones all the week long? is nature better enabled to subdue their ill effects, when taken in large quantities, than in small? may it not be as well said, that a porter can carry a cart-load of stones at once, as easily as by taking them in several burthens? and lastly, I appeal to the experience of every chymist, who knows *what fermentation is* and of every person whose stomach is most subject to generate acidities from fermentable substances, and particularly from wine, whether a bottle, taken at one time, will not produce a greater sensation and quantity of acidity, both in the stomach and intestines, than the same bottle divided into seven parts; one of which is to be taken daily? and I will venture to aver, that half a pint may be better taken every day, at *two* meals, than one bottle, at any *one* in a week; and that then there will be no need of six days and nature's assistance to subdue it and recover intirely, by drinking water or small beer. Does not this seem like a Monk prescribing sin, for the sake of producing repentance, in order to receive his pecuniary reward more frequently by repeated confessions?

To the preceding it is as peremptorily subjoined, "that water is the only liquor nature knows of, or hath provided for all animals; and whatever nature gives us, we may depend upon it is safest and best for us." I have a strong suspicion, that dame Nature knows more than the

doctor allows, and that she is not so totally ignorant of all other liquors as he asserts. For example, is not milk a liquor? does the old gentleman know nothing of that? or, is milk not provided for animals? And may we not depend that this is safer and better for us than water *only*? I have a notion, also, that the doctor's idea of nature and mine may differ. For instance, I humbly conceive, that nature hath given us apples, pears, and grapes, and that the juices of them are liquors that are not water.

Nature hath given to man a palate to taste and approve of what is useful; a desire to preserve these juices, after the time of their ripeness is past, and the fruits are decayed. She hath given him faculties of the mind to observe, that hollow things will hold fluids, and on that account to put such juices into them. She hath given to these fluids, so contained, a spontaneous fermentative quality, which renders them spirituous and preserves them wholesome. And she has given us thirst and weariness, to incite us to drink it. All these things are as much the progress of nature as plants converting the water and salts, which they draw from the earth, into the rich juices of the preceding fruits. And, I hope, that it will not be disputed, that nature knows that we think. Is nature then so ignorant as Dr. Cadogan asserts? is water the only liquor which she has provided for all animals? as well might he say, that grass is the only food provided for all animals; because all the graminivorous are nourished by that grass and convert it into another substance of *flesh*, and therefore that nature knows nothing of the *latter* as an aliment man; as that she knows no other liquor than water, for because the others are made by vegetable powers,
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spontaneously operating on their own productions. What a variety of novelty does the doctor afford his intelligent readers.

Dr. Cadogan is insatiate in his desire of exhibiting his *universal knowledge*. For, having given the preceding specimens of unprecedented science in physics, metaphysics and morality, he now becomes a theologist, and comments on St. Paul. But first he deviates from his former assertion of water being the only liquor nature knows, and doubting says, “ wine, if it be not one of our own inventions, was given us as a cordial in sickness, weariness, sorrow and old age; and a most salutary charm it would be for most of these evils, if we did not exhaust its power by daily use; and instead of taking it as such, drink it up as common draught, in youth and health to make us mad.” How then are the advocates for *a little* wine so egregiously mistaken? And thus, this wine, which the doctor says is the *bane* of all, is become a cordial and most salutary charm, in sickness, weariness, sorrow, and old age. Do these circumstances change the essence of the liquor from being poison, to the most salubrious qualities? by what magic is this surprizing transmutation accomplished? why, by Dr. Cadogan’s forgetting that he hath said one thing, and then, by saying another, and is not that sufficient?

The doctor now talks of the ill effects of indulgence in wine, in favour of which no man hath ever written; and says, “ that men think they cannot live without a little wine every day; and their very existence depends upon it.” If they mean that they cannot live comfortably to themselves, without a little wine, those men say right, who have been used to it. If they literally mean they
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cannot exist, they say wrong. And when they add, that their stomachs require it, nature calls for it, and St. Paul advises it: They speak right also, and more particularly in arthritics, *a little* of it must be good; and therefore men do not catch at every shadow of an argument that favours their inclinations."

And now for the comment on the Evangelist. "St. Paul advises it as a medicine sometimes; but certainly not every day." But, by the doctor's permission, let St. Paul speak for himself. "Drink *no longer water*, but *a little wine* for thy *Stomach sake*, and thine own infirmities." Now does the saint advise a little wine only as a medicine, *sometimes*, when he bids Timothy *drink no longer water*? what was there for him to drink besides wine, when water was interdicted in a country that produced no other than these two liquors for general usage? St. Paul, therefore, is as much forgotten as Hippocrates, Aretæus, Celsus, Sydenham, Musgrave, Boerhaave, Hoffman and others; and the doctor is equally new, by dint of oblivion, in divinity as in physic. For no man surely can harbour a single thought that Dr. Cadogan hath not read the bible. And now I will ask, if there can be any man mad enough to *renounce* the *Apostle* and *believe* in the doctor of physic. *Credat judæus non ego.*

To this is subjoined. "It will be said, that many drink wine every day, without gout, stone, or any disease at all, in consequence of it." The doctor is right; this hath been said for ages, and will most assuredly be said again and be true also. But I much question, whether that which follows, will ever be said by any other physician, "I believe not many who drink wine daily or I should know some of them." Now is there another

another doctor in all Great Britain who knows no one, without gout, stone or other disease that drinks a little wine every day? surely this doctor is infectious to his acquaintance, or he has the strangest set of them that ever man knew: or does he keep an infirmary and, living entirely among his patients, renounce the intimacy of all those who are in health?

However, the doctor adds, "if any are so strong as to bear it to old age, unhurt, they must be very active as well as strong to subdue it; but I have nothing to say to those." There the doctor is right. But will not *they* have something to say to him? will they not demand by what argument he can justify, that wine is *an universal bane*, when they have lived for fourscore years in health and long life, in a daily *and copious* use of it? And I verily believe, if St. Evremond and he shall ever meet hereafter, and the philosopher shall not have lost his old pleasantry, he will take an opportunity of treating his regimen with a sort of ridicule." I have heard that at Bath, on St. Patrick's day, when an Irishman gave a toast, to the glorious and immortal memory of King William and St. Patrick, the well known *Joye*, said—tit—tit—tit, drink to their better acquaintance, my dear, they have never seen one another yet. So here it goes to a better acquaintance for Dr. Cadogan, that he may know one man, at least, without gout, stone, or rheumatism, who drinks a little wine daily.

The doctor acts prudently to quit such sort of folks, who will not be sick with wine. For, as he says, "my business is with the invalids *who complain*, and certainly ought not to measure constitutions with those above their match." There is, indeed, no *business* for a physician among the others who do

do not complain. We are now favoured with another specimen of the doctor's knowledge in nature and women. "Nature, like a true female, cries out at the first violence, but submits in time, is reconciled and grows fond of the ravisher." This, I apprehend, is given as an encouragement to those who incline to ravish and to drink wine, as well as an exhortation to the ladies to *be true females*. For, unless this comparison be to illustrate the effects of wine, and the reconciliation of that liquor to the stomach, by persisting in it, I am at a loss to discover its meaning. For surely, the crying out at the first violence, the submission and reconciliation by time, and becoming fond of the ravisher at last, can never be arguments either to intimidate us from drinking, or to abstain from either object, whether it be woman or wine, which run in a parallel? However, it is new in aptitude of illustration.

Dr. Cadogan then prefers French and Italian wines to Madeira, Port, and mountain; and so do most other people respecting flavour. And then he comes once more "to the repugnancy to natural digestion, and hardening every thing, which are the qualities of the stronger wines," as the doctor says. But Sydenham is in favour of Spanish wines and Canary. And now, says Dr. Cadogan "thus have I endeavoured to point out two of the true primary, capital causes of the gout, and most other chronic diseases; and most sincerely wish, that what I have said may engage those whom it mostly concerns, the gouty, the infirm, and valetudinary of every class, to observe, reflect, and think for themselves upon the hints I have thrown out; in which light what I have said, must be considered, rather than as logical or as demonstrative proof." And here we

we find, that the doctor is not less inconstant in his *wishes* than in his *opinions*; for, in the 51st page of his dissertation, he says, "that not to the advocates of good living do I *wish* to address myself." Why did he *not* wish it *then*, and wish it *now*? do the advocates for good living form no part of the gouty, the infirm, and valetudinary of every class? However, let them defend their good living by arguments and they are safe from disease. I apprehend that either the doctor had not taken his *judicious* medicine, or that it did not *operate* the day he wrote this passage. And I am the rather inclined to this, because he *wishes* to engage the gouty, the infirm, and valetudinary *to think for themselves*, on the *hints* he has thrown out: which if they do, I am apprehensive they will be conceived, indeed, to be as the doctor says, something else, rather than *logical or demonstrative proof*.

To the antecedent the doctor adds, "I know the reasoning and arguments may be much improved, and carried farther, and if I had more leisure I might have attempted it." I differ in this instance from the doctor. For I verily believe, that no man who *hath* lived, *now* lives, or *shall* live, either had, has, or will have the power of carrying these arguments and reasoning so far as Dr. Cadogan hath done. And, therefore, I presume that no leisure will enable him to exceed himself in his present performance. Notwithstanding this, says he, "but I am well aware of the insurmountable difficulty of convincing men, against their will, by any arguments at all." Here we differ again; for I suppose that *volition* does not make arguments *insurmountable*, and that great numbers have been, and daily are convinced, by arguments against their will, that they shall be hanged at Tyburn. And
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it seems not improbable that some of the arguments in this enquiry, may convince the doctor, without any immediate act of volition in himself, to assist them.

The doctor having said so much of his *no wishes* and *his wishes*, now declares. "I chuse, therefore, at present, to invite them to self-conviction, from their own observations and experience." Had he not done much better to have left that invitation alone? "for should they, as the doctor flatters himself, they will find it well worth their pains to reason a little more than they do with and for themselves." May they not renounce the dissertation. And then, "will it not be a great point gained for them, if it turn their misled opinions from all that imaginary power of restoring health which it contains, as well as some of that multitude of ridiculous and most truly contemptible medicines, that are daily obtruded on the public with endless lyes to recommend them, by a set of the poorest, most ignorant, and paltry rogues in the nation; and engage their attention to their own true remedy, a right institution of life, in judging of which, if they find themselves mistaken, they may be assisted by men of humanity, skill, and honesty."

I had, not long since, the honour of spending an evening with Dr. Rock, when, taking Dr. Cadogan's dissertation from his pocket, he turned to the preceding passage, and in a very orator-like manner addressing himself to the company he pronounced the following speech.

"Gentlemen, there is one William Cadogan, M. D. who has taken the liberty to treat me in a manner unbecoming a gentleman, respecting both himself and myself as brothers of the same faculty of physic. I am Richard Rock, M. D. as it may be

be seen in print every day : and by what magic are these two letters at the end of his name, of more authority or importance than at the end of mine ? he says, that I have misled the opinion of mankind by an *imaginary power* of restoring health, by a multitude of most ridiculous and truly contemptible medicines, with endless lies, to recommend them. Now, how can this doctor truly say, that my medicines are of imaginary power, ridiculous and contemptible, unless he knows of what they are compounded ? I say the same of his diet ; and there is the word of one M. D. against another. Does he know the ingredients with which my Jesuit drops are made ? from his manner of writing, there is great reason to suspect that he hath not much of the Jesuit in him. Does he know the composition of *my royal patent Electuary* ? has *that* no power of restoring health in rheumatisms, scurvys, &c ? do I mislead mankind by imaginary powers in that medicine ? I defy him to meet me with *my* patients and to bring his *own*, and then let the world be judge on which side the cures abound, and who misleads ? it will be then seen, also, who recommends himself with endless lies in his publication. And if I am rightly informed, there is not all *that truth* which can be wished in *his* advertisement of the Magnesia, when he calls it *his Magnesia*.

Besides, gentlemen, I have his majesty's royal patent for my Electuary ; how then do I obtrude my medicine on the public ? he that reflects on the powers of that medicine, reflects on the patent of his majesty, and consequently on the king himself, who granted it. Would our most gracious sovereign have honoured me with that distinguished mark of his favour, had I been the most ignorant, paltry rogue in the nation ? The doctor might, I think, have treated his king with respect, notwithstanding

standing his contempt for the faculty of physic, of whom I wish I could say he was a worthy member. But let the college look to that. Thank heaven; he is neither acknowledged nor received into our fraternity, although he advertiseth as we do. As to my poverty, Richard Rock, M. D. rolls in his chariot as well as William Cadogan, M. D. and should not he have proved me a liar before he had uttered an expression so unbecoming from one M. D. to another?

But envy is an infernal passion. I make no comparisons, because comparisons are odious. Yet, wherefore does Dr. Cadogan envy Dr. Rock, his skill and success in practice. I have no envy for him. Let him live according to his own diet, and keep his patients alive by it too if he can. Let me live as I please and cure my own patients by my own medicines; and I defy any practitioner, common or not common, in his advertisement; to say more of the powers of his medicine than Dr. Cadogan does of himself. Even my brother Hill, no common practitioner, whom I allow to excel me, and all men, in the great art of writing an advertisement, but not in that of physic. For when this Dr. Cadogan talks of engaging his readers attention to their *true remedy* and *right institution of life*, what does he mean but that his *regimen is that only true and genuine remedy*. And when he says, if in judging they find themselves unequal to the task, they may be assisted by men of humanity, skill, and honesty, who can he mean but himself alone? for such must be the meaning of one who declares that mankind have hitherto most assuredly not had even a few rational ideas of chronic diseases. And now, gentlemen, I submit to your judgement, which of us

two

two is the most agreeable to Dr. Cadogan's own ideas of a real physician."

I confess that this harangue was received with too unanimous an approbation by the whole company, as containing much good matter to Dr. Rock's purpose of speaking.

S E C T I O N. V.

"**I** Come now, says Dr. Cadogan, to the last general cause of chronic diseases, vexation. A very fruitful parent of many bodily evils, producing general diseases of inanition, much more difficult, not only to be cured, but relieved, than those we suffer either from indolence or intemperance; but as it is not so common a cause of the gout, as the other two, it may not be necessary to consider it very minutely at present. I shall not, therefore, enter deeply into the regions of metaphysical conjecture, nor run wild after my own conceits, or theirs who have gone before me, in guessing at the incomprehensible union of soul and body, and their mutual powers of acting upon each other."

By this passage I find that the doctor hath altered the regions of metaphysics, and that they now lie *deeply* under ground, and are to be reached by pioneering, as they formerly were by *soaring* high in the air. The next is, that Dr. Cadogan intends to desist from running astray after his own conceits; at least, about the incomprehensible union of soul and body, and their mutual powers of acting upon each other. And then, to prove it, he begins the next paragraph,

graph, by shewing what the powers of the soul are over the body. New consistency.

“The first immediate effect of violent grief, or vexation, is to take off the action of the stomach entirely.” And is not this caused by some power of the soul over the body, which the doctor says, he will not run astray after in guessing at. And now for a description of the effects of sudden and affecting news. “Let us suppose a man in the best health, the highest good humour, and, as well as good stomach; sitting down to dinner with his friends, receives suddenly some very affecting news, instantly his appetite is gone, and he can neither eat nor swallow a morsel. Let the same thing happen after he has made a hearty meal, as suddenly the action of his stomach, the whole power of digestion is cut off totally, as if it were become paralytic, and what he has eaten becomes a most oppressive load. Perhaps, as the excess of weakness is often convulsive, it may be rejected by a violent vomit, or do greater mischief.” The description is good, and it would be no undiverting object to see a city council-man with his napkin tucked in, and joyously prepared to devour the turtle and the venison, just looking on the table, receiving such news; for, hang me, if I should like to be present at the operation of it after dinner. With what expression would his countenance be impressed, when vexation from the loss of money is embittered by that of his appetite and an absolute incapacity of swallowing. However, thank heaven, these affecting scenes do not so often arrive as to occasion much mischief to mankind, or the loss of many dinners. As *perhaps* are ambiguous things, I am of an opinion somewhat different from that which follows the doctor’s *perhaps*. I should not have said, *perhaps* at the excess of weakness is often convulsive; but that the excess

excess of convulsion is often *excessive strong*; and that therefore, the stomach rejected the dinner by a *violent* vomit. For *excessive weakness*, in the cause, is not likely to produce *violent* strength in the effect, unless it be in this new philosophy of Dr. Cadogan. And then we are informed, that, “for this reason, such strokes of distress are less hurtful received upon an empty, than a full stomach.” Now I take it that half and half, neither empty nor full, is better than either of them: for a stomach should be loaded like a ship, not that a brisk gale might oblige the cargo to be thrown over board; nor so void of ballast as to be overset by every breeze.

Dr. Cadogan now becomes a querist, and asks the following question: “but, why is this? what connection is there between a piece of bad news, and a man’s stomach, full or empty?” in my opinion, a vast deal. For example, suppose a man, seated like the common-council-man above described, his imagination glowing with the expectation of devouring three parts of the fat of a haunch of venison, his *lady* and two sons being the only guests who are invited to participate with him in that delicious viand; suppose, at this moment of delicious expectation, the very afflicting news should arrive, that a great dog had run away with the haunch, is there not a great connection between the bad news and the empty stomach? Suppose again the same conspicuous protector of the city constitution should have satisfied his stomach on such another haunch, preceded by a dish of turtle; and the bad news should arrive, that the ship was lost, which he had been informed, had on board for his stomach the precious cargo of another turtle; and that a second haunch of venison, by the carrier’s neglect in timely delivering it, was so to-

tally spoiled, that it could not be eaten ; is there no connection between these losses and a full stomach ? do none exist between the previous warming of the imagination with a glorious repetition of the like delights, and the disappointment of those things which form the essential happiness of the stomach in a man of that eating and exalted rank ? why then does Dr. Cadogan evade the mentioning of these causes so obvious ? and only say, “ whatever the cause be the effect is certain and invariable.” And so is every effect where there is a cause, excepting the *causa proegumena*.

The doctor continues his queries, “ is it because the animal spirits, or the action of the nerves, whatever be the secret cause of their power, is called off to supply and support the tumultuous agitation of the brain ; and the stomach with all its appendages and their secretions is left powerless and paralytic, and must therefore act convulsively or not at all.” I think this may be better accounted for by supposing the man’s brains in his belly, where the tumultuous agitations have hitherto been described to take place ; and that the spirits are thereby called to that part. Otherwise it may be difficult to reconcile how the stomach and its appendages, being left *powerless and paralytic*, can be *impowered* to act convulsively, which is an act of the greatest strength. But, supposing the brain to be in the belly, and then calling all these, *whatever be the secret causes*, to supply and support it ; may, it not then, by consent and proximity of parts, impower the stomach to act convulsively ?

Dr. Cadogan, having done the business for the *stomach*, the *brain* and the *intestines*, whips on and gives an account of the affections of the *heart* on this occasion. This being described, with all the rapidity

rapidity of the true physical sublime, ends “in many kinds of diseases, of such horrible and terrifying appearances, formerly not otherwise to be accounted for than by the malefice of forcery, and the immediate possession of devils.” These being diseases so truly tremendous, I forbear to repeat the symptoms of them, in compassion to my readers, with adding this remark, that such causes are not to be found in Hippocrates nor Galen, nor in any Greek or Latin authors in physic. As I do not understand Arabic, I should have imagined the doctor might have found this forcery and these devils in the books of physicians, who have written in that language; unless he had treated the Arabic as rubbish, and always kept his eyes upon the surface, to find the truth; which it seems hath now left the bottom of the well, and swims on the face of the water.

Such being the effects of sudden grief, Dr. Cadogan tells us what are the consequences in slow, silent, and long-continued grief, which being but melancholy subjects, and because the doctor does not even propose a cure by his regimen; and because I have no intent to make myself melancholy, I leave it to be read in the dissertation, for those who may chuse to divert themselves by meditation on the maladies which cannot be cured, as sayeth Dr. Cadogan.

We are now told, “whoever vexes long, must certainly want nourishment?” why then I conclude, that it gives him an appetite to eat, and does not take away his stomach. And thus vexation, like the viper, carries its poison and its cure in itself. However, Dr. Cadogan is of another opinion. And then, describing the effects of the passions, declares, “that he thinks the word vexation com-

prehends the chief of those passions that hurt us most ; that he does not mean to make a metaphysical enquiry about them, and it is needless to be particular upon each." And, indeed, in this place I confess my own vexation in being disappointed of enquiring into such an enquiry ; because I am persuaded the doctor would be very new and diverting in his metaphysics, from the specimens which he hath afforded us of that science. However, " let it suffice, as he says, that he hath shewn the immediate and remote *influence* of vexation upon the human body, although the doctor hath said that he will *not* go astray in guessing at the incomprehensible *powers* of the soul *acting* on the *body*.

The preceding account, being happily executed and concluded, the doctor says, " whatever men may think of their diseases, their strange symptoms and appearances, and their unaccountable causes, these are the three original great sources of most of the chronic diseases of mankind." Why, if they be, then I am persuaded that let men *think* what they please, they will never alter *cause and effect*. " These, the doctor says, I have endeavoured to set forth and explain, in so familiar a manner, that I hope I have been perfectly intelligible to every one who will venture to think and judge for himself." And thus the hasty extract of a plan from a much larger work, which is intended only as a *sketch* that may seem to *want* farther illustration is converted to an account *perfectly* intelligible.

Now I apprehend that this enquiry will render it somewhat *more* intelligible than it was before ; and therefore, that the dissertation is not quite perfect. And I should apprehend, that those who will *not* venture to think and judge for themselves, would
be

be the most profitable readers, because, from these I should expect the greatest number of patients, and to those I would have applied. And, therefore, feeling for Dr. Cadogan as I should for myself on a similar occasion, "I should *not* have addressed myself as he hath, and have furnished hints and observations which may be extended and applied to particular cases *by such rational people only*." For certainly, he that is the physician to fools, may grow immensely rich with a very small share of such patients, whilst he, who attends all the people, in Great Britain, who are *rational* in physical affairs, will starve by his profession; or be reduced to a perfect acquaintance with the temperance of Spain and Portugal, without travelling to either of those countries for such knowledge.

And here again the doctor varies from himself; for he is once more returned from *wishing* that every class of the infirm and valetudinary would observe and obey what he says, to *the neither wanting nor wishing* to obtrude his ideas upon any man, however warranted he may be to think himself from the observation and experience of his *whole* life." From this I conclude; that the doctor cannot be offended with my differing in opinion from him: and this for two reasons. One, because he assures me he does neither *want* nor *wish* to obtrude his opinion on any man. The other, because the doctor is *dead* and can't be offended. For otherwise in what manner can he have had the experience of his *whole* life, if any part of it still remains *to be lived*. However, if Dr. Cadogan will avail himself of Dean Swift's arguments, when he proved that Dr. Partridge was dead, because *no man alive* did ever write so, there may possibly be some folks who may acquiesce in his reasoning.

And now Dr. Cadogan says, “ my principal aim has been only to make men stop a little in their career, and consider with themselves, whether it may not be possible for them to be mistaken, even in that course of diet and those habits of life which they never suspected.” Now, till this moment, I imagined that the doctor’s aim was to make men desist entirely from such diet and habits, and not to *stop a little* and *consider* them only; for I think small stoppages and considerations do not promise great cures. And I do suspect that there was another aim of the doctor’s still *more principal*, than either one or both of the preceding. But as a good writer should always leave something to the imagination of his readers, I shall observe that rule and leave *mine* to discover what that aim of the doctor’s may be.

Dr. Cadogan once more discourses against colds, as being the causes of disorders that last long; and adds, “ that when a healthy, robust person takes cold, which can happen but rarely, if this be the whole of the disease, it cannot last long.” But if it be not the whole, why then they have a fever which frequently kills them and *lasts all their life*. Not colds alone, “ but complaints of a bad constitution, when we have spoiled, perhaps, a very good one; or with Sydenham, that the epidemic constitution of the air has infected us, or that this or that trifle hath disagreed.” The doctor had done better to have left Sydenham alone, than to have made him say what he hath never said. Where will the doctor find that Sydenham says, *the epidemic constitution of the air has infected us*? it is a figure in rhetoric which he seldom or never useth; would Sydenham say the constitution of the air was *epidemic*? He says, that *occulta aeris diathesis et inexplicabilis*

plicabilis temporum ratio, mortales incessere; which is, that the disposition of the air and the inexplicable qualities of the season bring diseases on the people. The *diseases* are epidemical, and not the *air*. Unless, indeed, in this new physical philosophy the cause and the effect be the same thing. But the doctor is eternally new in forgetting what he has read. And yet, perhaps, when he read Sydenham, if he had remembered him too, he would not have been half so new and so clever in exhibiting his few rational ideas about the gout, that were totally unknown to mankind before the publishing of his *brochure*. And I will venture to pronounce one thing, and to defend it too; that he, who thinks lightly of Sydenham, will never be believed to have lifted his eyes up to nature, or consulted her book, open as it lies for the perusal, conviction and benefit of all.

Having touched on Sydenham with the preceding stricture, the doctor again is fully and firmly persuaded, “that whoever will reflect with some degree of *intelligence* and *sanity*, be just to himself, and candid with his physician, will in general be able to trace his complaints up to one or other of these three causes.” Thus all who will not, are consequently either *fools* or *madmen*, and this notwithstanding the doctor hath allowed the chapter of *accidents* and *fevers* not happily ended, to make some part of the causes of chronic diseases.

Those, however, who are intelligent and of a sound mind, “must infallibly see how vain and idle all their hopes and expectations of lasting remedy and established health must be from any kind of quack medicine, and the general practice of physic, when the whole is to be rested upon something given to *swallow*. How inadequate the
means

means are to the ends proposed and hoped for." Indeed, if the expectations be to be founded *wholly* on something to be swallowed, why that seems to be too much; because exercise is to constitute a part of the cure; but the diet is, as I apprehend it, *something to be swallowed*, unless it be to be administered by way of clyster, and then one half of the hopes of cure ought to depend on administrations, if not on arguments, *a posteriori*.

To this is added, "how ill vomiting and purging can supply the place of temperance, bleeding, blistering and all artificial *evacuation*? of activity; cordials and opium; of peace of mind; is not this to fill the body with harsh and unwholesome juices, and tear the body to pieces to get them out again? why will not these evacuations come out of themselves? for I apprehend the cordials and opium are meant to be "the causes of intoxication and stupefaction to take off the sense of pain, and leave the cause where it was, or fix it faster." The doctor, however, decries all the preceding methods and trusts to his mills in the human body, "to grind down all the acrimony of angular aculeated particles, and make them smooth and round, and easily divisible." Now I should imagine, that this grinding work being so vehement, these mill-stones, like all others, would be ground down with the grist; and rather wear out than repair the fabric. But happily for us there exists no such trituration or grinding work in the animal body. For, by what powers of grinding can one thing be changed into another, or vegetable food into animal substance? will trituration, out of the body, carried on to all eternity, convert herbage into beef, or even impart the least alteration to the nature of the substance?

Away

Away then with all this grinding work and let us draw the like inference from things in animal bodies, as are seen and observed in plants; in the latter of which the salts, water and earth itself, are converted into vegetable substances, as the vegetable are into animal, by the powers of heat, the only power by which a transmutation is produced by the operations of nature, on which heat the cure of chronic disorders more immediately depends; and of which not a word is spoken in this dissertation.

Dr. Cadogan then again repeats the evils of disease, "till they put an end to our miserable lives. These evils, he says, are considered as the inheritance of human nature unavoidable and incurable, and submitted to in absolute despair; though there has not one *rational* attempt, that I know of, ever yet been made to remedy them in earnest." And is not this *want, of a rational attempt* to cure, sufficient to make men to consider these evils as unavoidable and incurable, and to yield to despair? surely this is very new in consistency of opinion, energy of argument, conclusiveness of reasoning, and marks of no common practitioner. But now the terrestrial messiah is arrived, disease flies before his face, *like morning clouds before the sun*, activity, temperance and peace of mind attend his footsteps like mutes at a funeral, carrying tapers to the interment of laziness, voluptuousness and vexation. For the rational attempt, unrevealed and untried before, is perfectly accomplished by Dr. Cadogan. Burn the books of Hippocrates, Galen, Celsus, Sydenham, Musgrave, Boerhaave, Hoffman, and all other rubbish of Greek, Latin, Arabic and modern physicians. And then, let every regular, semiregular and irregular practitioner, whether he be mounted in a chariot, on a stage,

or

or walk on foot; whether he advertise his medicines or himself, be hanged. Yes, my good readers, hang Wintringham, hang Heberden, hang Adington; but for *honest Will. Cadogan, real Will. Cadogan, liberal Will. Cadogan, rational Will. Cadogan*, and therefore the more *rational*, being as he is, *new Will. Cadogan* hang not him; save *honest Will.* and hang all the rest.

And now the doctor concludes his division of vexation, in a manner that does honour to his modesty. "All the methods hitherto employed have been only to relieve, and those often so perniciously, that the future health has been sacrificed to obtain present relief or ease. This must for ever be the case, when in chronic diseases it is obtained by art, and nature has no share: or where the physician does all, and the patient nothing for himself." And now, I would gladly know, in what author the methods of temperance, exercise and peace of mind, have not been *employed*, or where a cure was expected without the assistance of *nature*? Oh oblivion! what power of assertion and of novelty canst thou bestow on human intellects.

And here ends the doctor's chapter of vexation, without proposing a single remedy, either in medicine or regimen, for the endless miseries which it pours upon us; without so much as proposing his own *judicious* medicine, which, in this case, bids fairest for a cure; or even one glass of wine, that cordial in *sorrow*, to which, as he says in another place, *it would be a most salutary charm.*

SECTION.

S E C T I O N. VI.

IN the seventeenth page of his *blessed* dissertation, as an old woman once said of Baxter's hat, Dr. Cadogan tells his readers, "it may seem needless, at present, to trouble ourselves about a definition to say what the gout is ; but I will venture to say what I am persuaded it is not. It is not hereditary." I fancy that may now be called in some doubt. "It is not periodical;" that I presume may be suspicious also. "It is not incurable;" and now I am come to the doctor's cure for the gout. And we shall see how that tallies with this assertion. He begins, "having set forth the real causes of the gout, and all its congenial diseases, I come now to the most essential part to administer all possible comfort to those whom great pain and long suffering may have made docile and willing to take health upon the terms it is possible to have it." These are certainly terms the most enlarged in nature, and news the most pleasing to all mankind.

The doctor tells us he has the administration of all the *possible* comfort by which health is *possibly* to be had. I remember a crack-brained fellow entering a coffee-house near the Temple, exclaiming, rare news, my boys, rare news for you all ; the devil is a bankrupt ; for his sulphur-merchant will trust him with no more brimstone ! but alas ! the name of Satan hath not hitherto appeared in the gazette, nor does the name of any man appear in the dissertation cured by the doctor's regimen, except that of himself, and is it not rather too much to allow any physician to be at once the curer and the cured in evidence of his doctrine ? *Most assuredly* no mortal can deserve to be relieved from pain and suffering who will not be satisfied but with having
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it on *impossible* terms; and yet, alas! we now find the positiveness of curing the gout is sunk into the possibility of *administering comfort*.

*Ah! mortal man, and worm's meat,
Why hast thou uttered words so great.*

Dr. Cadogan now says, "to the young and voluptuous, who are yet in their career, and declare for a short life and a merry one, I have nothing to say, but this; that a short life is very seldom a merry one." Why then, doctor, it contains but one part of the life for which these voluptuaries declare. And so if you have no more to say, you may as well be silent. However, the doctor has more to say. "On the contrary, it is generally made up of a few years of riotous pleasure, without happiness, to be severely paid for by as many more of pain, sickness, regret and despair." And now, can this be the short and merry life for which the voluptuous declare?

Dr. Cadogan then subjoins, "having shewn that the gout is not hereditary, nor inherent to our constitutions." I ask your pardon, doctor, I apprehend it is not clear that you have shewn any such thing. "But that it is frequently produced by the daily accumulations of indigested, unsubdued acrimony and superfluity, which, when they abound to a certain degree, must end either in a fit of the gout or some other disease." I believe it on the authority of those ancient and modern physicians, whose works, as you have most carefully read, so you have as entirely forgotten. And therefore, "as long as any vigour is left in the body; for nature will for ever free or endeavour to free itself, and purge itself of its impurities by gout, by fever, by pain of one kind or other, that takes off the appetite,

petite, and prevents the pouring in of more and more enemies to disturb its operation and make it ineffectual." And so sayeth old Master Sydenham, whom the doctor seems to despise, in the first sentence of his book : *dictat ratio, si quid ego hic judico, morbum quantumlibet ejus causæ humano corpori adversentur, nihil esse aliud quam naturæ conamen, materiæ morbificæ exterminationem in ægri salutem omni ope molientis*. Which is, these are the dictates of reason, if I can judge of her operations ; that diseases, however the causes of them may be destructive of the human body, are nothing more than nature endeavouring, by all means, to exterminate the morbid matter, in order to restore health to the sick.

However, the doctor says, to comfort the young voluptuaries. " Thus young people, after a fit of gout is happily and well gone off, are as free from it as if they never had it." What, no *causa proegumena*, no predisponent cause remaining, which operates without all effect? " Master Sydenham is of another opinion. He says, " that very rarely is all the gouty matter, however long and painful the paroxym may be, so fully evacuated, that no part of it shall remain after the fit is passed." " However, if they would take warning and be careful not to breed it again, most certainly they would for ever remain free." Aye, doctor, if you cut off the entail of that inheritance, not otherwise. But, I confess, what is now added by you is truth indubitable? " How absurd, therefore, how ridiculously ignorant must be every attempt to cure the gout *in futuro* by medicine, before it be yet formed, before it has any existence?" absurd, ridiculous and ignorant indeed, to attempt by medicine to *cure a disorder, that does not exist*. A mid-wife

wife may as well deliver a woman who is not with child.

The doctor continues, "can such a medicine," what medicine doctor, for you have not yet told us what it is? "give strength and enable an old man, living in indolence, to digest and consume, or discharge the superfluities of its daily intemperance; that is, to give him more vigorous powers than nature gave him at one and twenty, or when the gout came first upon him?" Yes, indeed, can it, if a man can throw away his *future* health.

Then, says Dr. Cadogan, "the Duke of Portland's powder promised to do something like this, and most certainly kept off the gout for two or three years, but what was it? and what did it really do?" first, it was not, as I imagine, what you say, "a strongy *spicey bitter*;" but compounded of ingredients the most bitter, and least spicey, of all alterative medicines. Secondly, I doubt whether it produced the effect which you mention. Did it keep up a fever as long as it was taken, and keep the gouty matter always afloat? I suspect it acted like laurel water, as all such bitters, in some measure, do; and, by degrees, diminishing the vital powers, rendered them incapable to throw the morbid matter from the parts, on which life depends, on the extremities. This I conceive proved to be the death of those who took it. The doctor then says, "I myself observed between fifty and sixty of its advocates, some my patients, some my acquaintance or neighbours, who were apparently cured by it for a little while; but in less than six years time *omnes ad internecionem casti*, they all died to a man." This Portland powder is the very Bobadil of all pharmacy; it kills them all, all to a man. What, could not Dr. Cadogan save his own patients?

tients? why then, I will keep to my old physician; for it is as well to die by the hands of one regular executioner as another.

Other medicines, the doctor says, “have had the same fatal effects. Antimony and mercury, elaborated into poisons, by chemistry, have been administered; particularly the solution of sublimate has torn many a stomach to rags; so that it could never bear common food afterwards.” If these medicines, do, indeed, make this ripping work in tearing whole stomachs to rags, it seems to be no great wonder that they will not bear food in that ragged condition. Had it torn no more than the *coat* of the stomach, why that might have been mended, or a new one have been made by some advertising taylor in the *stomach* making *way*, but the whole being torn to rags seems to be as irremediable as that which happened to Joan’s pitcher,

*Rent and torn, rent and torn, rent and torn in twain;
Joan’s pitcher is broken and can’t be mended again.*

And now, sayeth Dr. Cadogan, “the deadly night-shade, and hemlock, and many such dreadful poisons, have been given as alteratives to restore health.” And even pickles, the worst of poisons, excepting bread, which is worse, and wine that is still worse than that, have been taken with beef steaks to restore health; and the persons, who ate or drank them all three at the same meal, have conquered this triple alliance of poisons. So have many also the *poisoning* antimony, the *tearing* sublimate, the *deadly* night-shade, and the *dreadful* hemlock. For, may not poison, in one quantity, be medicine in another? and may not those things which may

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kill

kill in the hands of those who lift their eyes up to nature and look for truth on the surface, be converted to a cure in the hands of physicians who *dive* a *pioneering* into the old Greek, Latin and Arabic rubbish, *which lie above ground*.

However, says the doctor, "the intention seems to be kill or cure." Why then, since that is the intention, and doctors love to do their business effectually; and since killing, by such medicines, is more certainly to be accomplished than curing, I would advise every patient, before he enters upon a course of medication, to know which of the two is his doctor's intention, and to follow or reject his prescriptions accordingly, as he intends to be killed or cured.

Dr. Cadogan now turns querist again, "can any one, in his senses, suppose that diseases, a man has been his whole life contracting, and to which he is adding every day by perseverance, in unwholesome diet and bad habits, are to be thus removed by a *coup de main ou de baguette*?" Notwithstanding the usual precision and preservation of words and ideas in the doctor's style, I confess myself somewhat embarrassed by the preceding passage. I do not see how a man, that hath been his *whole life* contracting disease, can *be adding* to them *every day* by unwholesome diet and bad habits. Were not these the causes which produced the disease? and if *the man's whole life* were employed in contracting a disease, how did he find *time, by perseverance, to add* any thing to that work? or do these men *live* one life in contracting these diseases, and *another* in the means of adding to them? I do not see the *dénouement* of this affair, and therefore I leave it to my readers as a new mode of perspicuity in style.

What

What may be done by a doctor, and a *coup de main*; that is, as I suppose, by the poisons above-mentioned, there requires no great discernment to discover. But what may be done by a conjuror and his *baguette*, or wand; as I am no conjuror myself, I leave *that* to Dr. Cadogan to reveal.

The doctor perseveres as a querist. “What then is to be done? how, and in what manner are chronic diseases and cachexies to be cured, and health restored and established?” Why the doctor says, “I have already shewn that the causes of these chronic diseases are indolence, intemperance, and vexation.” *Barring accidents, doctor, and fevers not happily ended.* “And if there be any truth or weight in what I have said, the remedies are obvious, activity, temperance, and peace of mind.” *Barring accidents, doctor, and fevers not happily ended.*

Dr. Cadogan then adds, “it will be said, the remedies are obvious; but impracticable. Would you bid the feeble cripple, who cannot stand, take up his bed and walk? the man, who has lost all appetite, abstain?” there can be no need of such an order, doctor, to one who cannot eat; “and the sleepless wretch, racked with pain, enjoy peace of mind? No, certainly, I am not so absurd. These must be assisted by medicine, and if they have not exhausted all its power already, a little respite, a favourable interval may be obtained, that with other artificial aids co-operating, may be greatly improved to their advantage; and, if rightly employed, they may get on from strength to strength, till they recover into perfect health.” The doctor then says, “but it is not my design, at present, to expatiate upon the particular kind of medical relief which every chronic disease may require.” As

Dr. Cadogan hath chosen to decline this task, at present, and to leave it for himself; as he says, it has been left to him by others, I beg leave to take the liberty of commenting a little on this passage. And, as the best comment on a man's works are the works themselves, I shall follow that method.

The doctor hath already spoken of these *respites* and *reliefs* of the diseased, which plainly appear to signify a temporary death of the patient; and then there arises the *interval* for introducing into the dead body, the powers of his *activity, life* and *nature*; and these, if rightly employed, may get him on, from strength to strength, till he recovers into perfect health. And this, I hope, may be justly deemed the artificial aids; and being now revealed, it may save the doctor the trouble of expatiating any further. For it really may, as he says, "lead him into too wide a field, and too far from his present purpose, which is to shew, that the gout, in most of its stages and degrees may be cured, a present paroxysm or fit relieved, its return for ever safely prevented, and the patient established in perfect health." And what man will refuse his assent, that this field is large enough of all conscience, and needs no addition of *medical relief* to increase its dimensions? let us see how the doctor finds his way out of *this* field.

And here it must be allowed, that he starts fair. "Let us suppose, says he, the case of a man, from forty to fifty years of age, who has had at least twenty fits of gout; by which most of his joints have been so clogged and obstructed as to make walking or any kind of motion, very uneasy to him; let him have had it, *sometimes* in his stomach, a *little* in his head, and *often* all over him; so as to make him *universally* sick and low-spirited,

spirited, especially before a regular fit has come to relieve him." In this manner of stating the case, there are some things which want explanation to my capacity. I do not understand how a man can have the gout *sometimes* only, in his stomach and a *little* in his head, when he has it *often all over* him; unless, indeed, the head and the stomach do but *sometimes* make part of his body. Nor do I see how a man can be either *sick* or *low-spirited* in his great toes, or fingers: and yet so he must be, if he be *universally sick and low-spirited*.

This, I do readily agree with the doctor, is as bad a case as he need propose. And God grant it may never prove to be a worse than he can cure. And so I sincerely wish him success in his practice. The doctor then says, and "therefore it will not be expected that every old cripple whose joints are burnt to chalk," that burning of joints to chalk, seems to be a new phænomenon in chemistry; for burning bones does not make chalk; and burning chalk makes lime. "However these burnt bones are grown together and united by anchyloses and the arthritic must be carried from his bed to his table and back again, should such a man be proposed as an object of medication and cure." Yes, doctor of *medication*, though not of *cure*; because you add, "and yet even he might perhaps receive some relief and palliation of pain, if he has any great degree of it, which is not very common in this case."

However, as the doctor says, "let us suppose therefore, the first example." And now I shall proceed, first to give Dr. Cadogan's manner of treating a fit of the gout, and then Dr. Sydenham's, making no comparison between the two doctors. For I know that Sydenham is not to be

compared with Dr. Cadogan. Because the former only proposes to alleviate the pains and protract the returns of the fits, by exercise, temperance and peace of mind : whereas Dr. Cadogan asserts, by these three an *eternal prevention* of the gout's returning may be accomplished and perfect health established. Only I beg to remark, that Sydenham has been hitherto considered as the least hypothetical and visionary of all physicians; the most faithful observer of diseases; of the ways of nature in curing them; and of the truth in his relations; that he had very great practice, and had himself the gout thirty-four years before he wrote his treatise on that disease.

“ If the point be to assuage the violent raging of a present paroxysm, this may be *safely* done, by giving some soft and slowly-operating laxative, neither hot nor cold.” Warm then, I warrant it. So it is, the doctor says so. “ But warm either in small doses, repeated so as to move the patient, once or twice in twenty-four hours, or by a larger dose oftner in a less time, according to the strength and exigency.”

Sydenham is of another opinion. He says, “ I am most certainly persuaded, being taught by the repeated experience of suffering from it, that every cathartic whether it be of the *lenient*, or the stronger kind, which, according to custom, is destined to free the articulations from the gout, is greatly hurtful: whether this purging be applied, either in the paroxysm, to lessen the offending matter, in the end of the fit to dissipate the relicks of the disease, or in the perfect intermission, or in health to oppose the future paroxysm. For I have found, at my own peril, and at that of other persons, that a cathartic, administered in
either

either of the preceding times, was so little corresponding with my wishes, that the evil, which it was intended to appease and avert, was encreased. And by these means the paroxysm was not only more violent, but that the patient was thrown into imminent danger of losing his life ; and that being administered in the conclusion of the fit, it caused the matter to germinate afresh and to produce a second paroxysm, not more gentle than the preceding. And thus the patient, deluded by a falacious hope, fabricated for himself those evils, which he had not suffered, unless, by purging, he had excited the arthritic humour into fresh rage. Whatever then appertains to cathartics, whether administered by potion or by clyster, it is to be observed, that since it is the inviolable law of nature, and interwoven with the essence of this disease, that the arthritic matter should constantly be thrown on the articulations ; that, on this account, cathartics will effect nothing else, but that the peccant humour, which nature hath driven into the extremities of the body be recalled into the mass of blood ; from whence it happens, that what ought to be discharged in the articulations returns with violence on the viscera ; and thus the patient who was in no kind of danger, is exposed to the great risque of his life. And then he adds, “ this method of cure, by cathartics, although it be pernicious and destructive, is used by some empirics and hath acquired them a moderate estimation.”

Dr. Cadogan says, “ proper cataplasms may also be *safely* applied to the raging part which often assuage pain *surprizingly*.” But Sydenham says, “ as to external remedies, for alleviating pain, I know of no such, although I have tried

many things with that view, both on myself and others, refrigerants and repellents excepted; the application of which I have already shewn to be perilous: and supported by much and long observation, I confidently assert, that the greatest part of those who are said to perish by the gout are not so much destroyed by that disease, as by injurious and unskilful medication." And by these alteratives it is that the pains of the gout are assuaged *surprizingly* and for ever. Hoffman also declares, "that from various observations he had found that apoplexies, palsies, loss of memory, cholics and convulsive asthma's, as well as inflammations of the stomach and intestines, had been consecutive of external applications in the gout."

To the preceding Dr. Cadogan adds, "and if the patient was young and vigorous, and the pain violent, there could be no danger in taking away a little blood." Let us again hear master Sydenham. "Bleeding is not to be admitted, either to prevent a fit, whose approach is apprehended; or to mitigate the pain, when it is arrived. By all those who are advanced in life, even in the intervals of the paroxysms, if blood be drawn, there will be danger lest a new fit succeed, from the agitation of the blood and arthritic humour, which will be of longer duration and attended with more enormous symptoms than the antecedent, and the matter recalled from the extremities to the vital parts; and this evil is recalled as often as a vein is opened in the beginning of the fit." However, he says; "if the arthritic be young, and heated by immoderate drinking, blood may be drawn in the beginning of the first paroxysm; but if it be drawn in the subsequent fits, the gout will much sooner become inveterate, even in young men,

men, and in a few years extend its tyranny farther than otherwise in many years it could have acquired the power of extending it." This is universally the opinion of all physicians who are most esteemed and distinguished for their medical science. And the fact was most notoriously and fatally verified by the practice of the late Dr. Thompson, who, by the untimely death of his patients, or the exacerbation of their torture, speedily admonished the surviving to flee from his medication and avert his mischief.

And then Dr. Cadogan says, "thus, in two or three days time, I have often seen a severe fit mitigated and made tolerable; and this is a better way of treating it, with regard to future consequences, than bearing it with patience and suffering it to take its course: for the sooner the joints are relieved from distension and pain the less danger there is of obstructions fixing in them, or their being calcined and utterly destroyed." But may not an arthritic, by being too solicitous to preserve his joints, be obliged to lose his life? after which, I humbly apprehend, his limbs can be of no great use to him? Sydenham answers this question in the affirmative, respecting the antecedent methods of cure; for he says, "by how much the more the pains of the patient are alleviated, by so much the more is the concoction of the matter delayed; and by as much as the lameness is restrained, so much the more is the expulsion of the morbid matter impeded. Add to this, that by as much as the fury and edge of the fit is blunted, not only the patient is thereby afflicted with a longer paroxysm, but his fits will sooner return, and he will be less free from all the melancholy symptoms during the intervals."

So

So great is the difference between Sydenham and Cadogan. And then the latter physician exclaims, "but, instead of this, the general practice is quite the reverse." Indeed, doctor, you are mistaken, "Oh keep up your spirits they cry; keep it out of your stomach at all events." This is the second time that Dr. Cadogan hath expressed his resentment against keeping the gout out of the stomach, as if letting it in were the best way of relieving the patient. This, however, is new in practice. And, for this reason, I imagine when it rages in a distant part, the bringing of it back, by cathartics, external applications and bleeding is always to be encouraged. And then the doctor says, "they drink strong wines and cordials, and eat rich spoon meats, raise a high fever, enrage and prolong the pain, and protract a fit from one week to six weeks, leaving obstructions and weakness in the parts, crippling the patient ever after." Thus, because an excess in diet may aggravate the symptoms, the mode of practice, which promises to recall the matter from the extremities to the vital parts to alleviate pain, is the only true method of treating arthritics. *Medio tutissimus ibis*. And now, in the words of Dr. Cadogan, "all this, I hope, will be fairly and candidly understood; for there is doubtless a great variety of gouty cases, but no case that will not admit of medical assistance, judiciously administered." Always, provided you apply to Dr. Cadogan.

And now for a truth which nothing can exceed in its utility, provided it could be carried into execution. "But the most capital point of all, and what is most desired by all, is to prevent its return, or changing into any other disease, and to establish health. And here most men would be very well pleased and happy could this be done by
any

any medical trick or nostrum, with full liberty of living as they list and indulging every appetite and passion without controul." Depend upon it, doctor, they would be very well pleased although this end were obtained by plain sense, and a medicine known to all the world. However, says Dr. Cadogan, "some poor silly creatures, ignorant of all philosophy and the nature of causes and effects." "Such, I apprehend, as the lord chief justice of the common pleas, and other silly fellows, who have followed Le Fevre, "have been led into experiments of this kind by a few artful rogues, very much to the prejudice of their future health, and danger of their lives also, expecting from medicine what it never did or can perform, the cure of chronic diseases." Now, if they have not lost their *present health*, how does the doctor know they will lose their *future*? and as I do heartily agree that he is a *rogue*, who leads men to the prejudice of their health, by any *medical trick or nostrum*; so I cannot but infer, should any man lead them to same place, by *regimen*, that he would be a *rogue* also.

The doctor perseveres. "I think that it is needless here to take any pains to shew the inefficacy of all the common modes of practice, vomiting, purging, bleeding, blistering, issues, &c. They have been found ineffectual, not only in the gout but all other chronic diseases." Not so needless, if the doctor please; for he hath long since told us, *they will do wonders*; and very *late*ly, that purging and bleeding are excellent remedies in the gout to lessen the pain and shorten the fit. And, therefore, it certainly requires *some pains* to shew how those things, *which produce these effects*, are *ineffectual* and *produce nothing at all*. But then the
doctor

doctor says, "all sensible practitioners must know their *effects to be but temporary*." How then are they not effectual? is nothing effectual but what lasts *for ever*? "and that they are meant and used only as means of present relief: and is such *relief* *na* effect." Why then there is but one sensible practitioner upon earth; for all the rest, save Dr. Cadogan, do verily believe that the venereal disease is radically cured by mercury; and that the administering of it is meant to be a radical cure.

And now, with Dr. Cadogan, "let us see what practicable plan, or regimen, here described, when a fit of the gout is happily ended, may for ever prevent its return; and so confirm his general health, that it shall not again be overset by every slight cold or trifling accident." And if it be only confirmed against *slight colds* and *trifling* accidents, I do not see how its return can *for ever* be prevented.

The doctor then says, "I have already shewen, that a certain degree of activity, or bodily motion, is necessary, at intervals, every day, to raise the circulation to that pitch that will keep the fine vessels open and the old blood pure; and also make new from the fresh juices." So have thousands before him: but not in the same way, by making the body consist of two *mills* and a *still*, and of *three sets* of circulating vessels.

"If the patient cannot be brought to this, says the doctor, he has no chance of recovering to perfect health." Very little, indeed. "If therefore, he can neither walk nor ride at all, he must by degrees be brought to do both by the assistance of others, which may be given him in the following manner." Of which I have nevertheless some doubt. "Let a handy, active servant or two be employed to rub him all over, as he lies in bed,
with

with flannels or flannel gloves, fumigated with gums and spices, which will contribute greatly to brace and strengthen his nerves and fibres, and move his blood without any fatigue to himself." To this, in a note, the doctor says, "a little friction may have little or no effect; but long continued and repeated often with fumigated flannels, it will do more than most other things or methods."

From a description of these *effects* I naturally recede to the *causes*; and therefore I conclude, altho' the doctor has omitted to specify the sex, that the *two handy servants* must be *maid servants*, who, with their *frictions*, fumigations, and flannel gloves are to *brace* and *strengthen* the nerves and fibres, and *move* the blood, without any fatigue to the patient himself. Although I think this to be a very good method of effectuating the preceding purposes, I differ in opinion from the doctor in that which follows. I doubt whether it may not "take up more than five or ten minutes at first: and I am sure it will not have the preceding effects if it be repeated five or six times a day, supposing him totally unable to help himself."

Then says the doctor, "*but if* he can walk a hundred yards only." *But* and *if*—are ugly things when they come after a *positive* assertion, that this man is to be perfectly restored to health and all returns of the gout for ever prevented. Well then, with this *but* and *if*, what is the event? Why, "it will forward him greatly to walk those two hundred yards every two hours." As much as it did the Irishman in his journey, who, riding post, rode three times over the same part, because he would have some more of the good road before he left it. For, if a man walk those same two hundred yards for ever, I apprehend, he will not be forwarded more
than

than if he walked them once only. "And, if he can bear a carriage, let him go out in it every day, till he begins to be tired." I would add if I might, to go out, and *come home before he be tired*; because if he persist in going out till he begins to be tired, I think the coming home after it may be too much. But I ask pardon for pretending to mend that which, in its nature, is incapable of amendment.

The doctor says, "the first day or two all this may disturb and fatigue him a little; but if he has patience to persevere to the fourth." What then? why then the doctor will dare to promise him some amendment and increase of strength." Promise him? why he promised that before. And *this* the patient hath already, who, from not being able to *stand*, hath been *rubbed* by the two *handy* maid servants into the ability of walking six hundred yards in a day. "And then he must employ it as young merchants do a little money, to get more." If they do not bankrupt. "And thus he must go on rubbing." Rub away, my *handy maids*; "walking and riding a little more and more every day, stopping always, upon the first sensation of weariness, to rest a little." Then, if he walks, let one of the girls follow him with a stool that he may not be made more weary with standing, "till he be able to walk two or three miles at a stretch or ride, ten without any weariness at all." I fear all this is like the wisdom of the young rat in council, who proposed the tying of a bell round the cat's neck, to pronounce his coming. It would be an admirable way, indeed, but where is the physician that can do it? Dr. Cadogan is the man. But what if another fit should come before this walking be effected? why then that would be a rub, which must be rubbed away by the maids,

maids, if it can be : if not, it is a rub for ever, and here ends the doctor's dissertation upon rubbing.

And now for the doctor's reasons of recommendation. " This is recommended with an intention to dislodge and throw off all remains of crude, gouty concretions that may have obstructed his joints," or which, like Bays's army in the inns at Knight's-Bridge, "be concealed in the *lacunæ*, or *recesses* of his body, to free the circulation *in minimis*, and all its secretions, perspirations and discharges whatever?" I do not remember that anatomists have denominated any part of the human body, in a man, the *lacunæ*. They have, indeed, given that name to certain glands which are situated in a *recess* peculiar to the females of our species : but then, I am at a loss to account in what manner the gouty concretions, of a man, can lie concealed in the *lacunæ* of a woman. But if Dr. Cadogan hath discovered, in the execution of his task, that things are so, then I confess, indeed, that rubbing seems to be a good method of dislodging and throwing them off ; but I fancy the patient will not receive these benefits, in consequence of the doctor's *intention* and the female frictions. And here I find I am right in my judgement. For the doctor says, " they may certainly be assisted and greatly promoted by a few well chosen, mild, antimonial, absorbent, and saponaceous medicines and sweetners, that like putting shot or gravel into a bottle, with a *good deal of agitation*, greatly help to make it clean, that without agitation will do nothing."

The simile is new and excellent, and it illustrates finely ; for it seems all these medicines, particularly the *soap*, are to enter the blood vessels in a solid form, through the lacteals, the apertures of which are invisible by the aid of a microscope, to all those
who

who cannot have an *ocular demonstration of things invisible*; and then they *mildly* scour and rub off all the concretions. But will not the doctor's *mill grind* down these medicines as well as it does the food? if not, I am afraid the *bandy* rubbing of the maid servants and the walking of a hundred yards may not be sufficient to give the patient due agitation. I would therefore humbly advise the adding of two more maid servants to toss him in a blanket; or the tying of him to the sails of a windmill, in a brisk gale, which will at once give him air, exercise and agitation, without labour to himself. A method which, as far as I have heard, hath not hitherto been applied to the curing of chronic diseases. And this would certainly much assist the scouring of the shot-like, gravel-like medicines in the body. And this mild remedy, I am not a little surprised, the doctor hath not directed. But perhaps, we may have it in the *great circle*.

The doctor, having thus provided for his patient's exercise, comes now to his diet. "Which must be such as may neither turn sour nor bitter, nor rancid, nor any way degenerate from those qualities necessary to make good blood." These are qualities which may be requisite enough; but where are the substances which will not do either of the former and accomplish the latter to be found? And then comes the bill of fare, "new laid eggs, dressed, *creamy*," (be sure to mind the creamy) "tripe, calves feet, chicken, partridge, rabbits, most sorts of white mild fish, such as whiting, skate, cod, turbot, &c. and all sorts of shell-fish, particularly oysters, raw." The reasons for so particularly recommending oysters, in the gout, in which a free perspiration is so essentially requisite, is, I imagine, because Keil hath observed;

served, that oysters restrict and lessen the perspirable matter more than any other food.

Be that as it may, "very soon he will be strong enough to eat beef, mutton, lamb, pork, *venison*, &c." if he can get it. Pray doctor must not the patient drink the weekly bottle the day he eats venison, and *get a little merry, for the sake of good humour, and good company?* Can it be eaten either classically or convivially with small beer or water? and now for the time of keeping these meats, "they must all be kept till they are tender," and now for the manner of eating them. "These must all be eaten with their own gravies, without any compounded sauces or *pickles* whatever," these are poison. "Instead of which boiled or stewed vegetables and sallads of letuce and endive may be used; and the luxury that is not unwholesome may be allowed, light puddings, custards, creams, *blanc manger*, &c. and the fruits of all kinds and seasons." Now, pray Dr. Cadogan, is skate a mild fish? are muscles, being one of the all kinds of shell-fish, not as poisonous as pickled cucumbers? will pork not become rancid in the stomach and surfeit; will the stewed vegetables and sallads not turn sour? and since all kinds of puddings and creams have been already interdicted, as hurtful, wherefore are they now to be introduced as wholesome? are not these, with custards, more likely to ferment and become acid than bread? and does the earth afford us any one production which more spontaneously runs into fermentation and vinegar than ripe fruit? and now we see how well you have adapted your diet, and your rational ideas to the causes of the disease and the cure of it. And I will venture to assert, that your temperance, in

eating, is such luxury as not one half of those can indulge in who have the gout. And therefore, it can never be the cure of that disease in them.

“ But, says Dr. Cadogan, because wine most undoubtedly produces nine in ten of all the gouts in the world, wine must be avoided, or taken very sparingly.” Indeed, doctor, you are most undoubtedly mistaken, as it hath been already shewen. Beer and cyder have as large a share in producing the gout, in England, as wine. However, you say, “ if a man thinks he must die of the experiment in leaving it off all at once, he must do it by degrees and drink half the quantity of yesterday till he has brought it to nothing.” And here the doctor shews his skill in mathematical quantities to be equal to that which he has in physics, metaphysics, and moral philosophy. For, in what manner can a man bring *something to nothing*, who leaves every day *one half* to be divided on the next ? And then he adds, “ but the danger of attempting it in this manner, is, that it will never be done.” There is more than a *danger* ; there is a *certainty* that it *can* never be done. I remark these things to prove how truly justified Dr. Cadogan *always* is in censuring all those physicians who have no kind of ideas to the words, gouty, rheumatic, &c.

The doctor then speaks out boldly, “ if he did it all at once, I would be hanged if he died of the attempt ; he would be uneasy for three or four days, that’s all.” Now I would not wish the doctor, for his own sake, to run this risque of being hanged ; and then, for the sake of the world, for how could it be supported after the hanging of the only rational physician it contains ? where shall such another philanthropist of a doctor be found ? for, like Hamlet’s father, take him for all in all,

I fear we shall not look upon his like again. But if he will risque that precious life, let him stick literally to *the patient's dying in the attempt*. And let not that attempt exceed a week : a day would be safer. That he will be only uneasy for three or four days, I am apprehensive, may also be dubious ; and so hear what old master Sydenham hath to say. " Water alone I esteem to be crude and perilous, and this I have experienced to my cost ; and therefore if the arthritic, either from a long or too great use of inebriating liquors or is of an advanced age, or, lastly, if from too great weakness he cannot digest his food without wine, or some other fermented liquor, it will be dangerous if he shall at once and suddenly abstain from wine, which error hath proved mortal to not a few who have thus relinquished that liquor." And then, contrary to the opinion of Dr. Cadogan, he prefers Canary to French wines. " The doctor, does indeed allow a little good porter or soft ale ; but then, by degrees, to come to small beer, the wholesomest and best of all liquors, except good soft water." And thus the small beer brewer stands next in degree of eminence to nature herself, for making the best beverage. However, these arthritics are not to be entirely rescinded from wine, only during the doctor's conflict with the disease. " As soon as his patient has recovered health and strength to use exercise enough to subdue it, he may safely indulge once a week or perhaps twice with a pint of wine, for the sake of good humour and good company if they cannot be enjoyed without it ; for I would not be such a churl, says the doctor, as to forbid, or even damp one of the greatest joys of human life." 'Sblood, said a friend of mine, he proves himself a churl in the

very words in which he renounces that character. He allowed us a bottle before, at one sitting, and now he reduces it to a pint. A plague on his regimen ; it is the very reverse of Falstaffe's reckoning. For in plump Jack's, there was a ha'p'oth of bread to two gallons of sack ; and this aquatic physician gives us but one pint of wine to a bill of fare that would tempt an alderman.

Dr. Cadogan now tells us, " we must never lose sight of the three great principles of health and long life, activity, temperance and peace of mind." The first we may easily, indeed, keep in view and the doctor hath given a substitute to the want of activity in the sick man, by the activity of his handy maid servants. But alas ! for vexation he hath offered no cure. Neither temperance nor activity will remove that. *Post equitem sedet atra cura*. She accompanies him also in his walks, takes the air with him in his chariot, sits with him at his table, lies, but does not sleep, with him in his bed ; and thus one of the three great causes of the worst of all chronic diseases is not to be removed. How then shall we keep in sight that which we cannot see, peace of mind ? However, " with these ever in view, he may eat and drink of every thing the earth produces. This is, indeed, an *indulgence pleniere* for eating and drinking. Moses, who received his intelligence from tolerable authority, is of another opinion, for in the eleventh chapter of Leviticus, you will find it thus written. " And the lord spake unto Moses and to Aaron, saying unto them, whatsoever parteth the hoof and is cloven-footed, and cheweth the cud, among the beasts, that shall ye eat ;" with exceptions also. But his diet, as the doctor says, " must be plain, simple, solid
and

and tender." Do not *solid* and *tender* seem difficult to be had in the same piece of beef? however, all kinds of earthly productions, solid and fluid, are again laid open to Dr. Cadogan's temperate man, and so good night to regimen; and yet, there seem to be several things, which the earth produces, that I would not advise him to eat; such as some sorts of fungus and some herbs; such as hemlock and henbane and the deadly night-shade. We are then told, "that we must eat but of one thing or two at most at a meal, and this will soon bring us to be satisfied with about half our usual quantity, for all men eat about twice as much as they ought to do, provoked by variety" By this account one would imagine there was not a man in all England, who did *not live* like a Lord Mayor or a Sheriff, at least. Why, doctor, sixteen parts in twenty of mankind in this kingdom, have not two dishes at a meal to eat of; and one half of these are so far from eating too much from the provocation of variety, that they have not one dish on which to satisfy their honest hunger six times in six months: unless they can feed on your ætherial diet, or eat what they have not. And these honest, industrious men would be more than satisfied, would you be pleased to give them, each day, that other half of the meal which is to remain after your patients are satisfied.

However, "we must drink but little of any liquor, and never till we have done eating." No hobbing nor nobbing at table. "The drier every man's diet is the better." And yet, not long since, we were told, that we spoiled all our meat by roasting and cooking it too much, and losing all the red gravy. How do you make this out doctor? by being always new in consistency of opinion? At one time we are to eat juicy meat, something

like a Tartar and a tyger, because that makes us healthy and strong; and then we must eat dry meat, like a horse, and never drink till we are satisfied; because that assists digestion. Does not your dissertation resemble the cloud in Hamlet, which was sometimes an owl, sometimes a camel, and sometimes a whale?

“No wine oftener than twice a week at most.” The wine increases from once and a *perhaps* to a *positive* twice a week, tho’ it lessens from a bottle to a pint. “And this must be considered as a luxurious indulgence.” A hard lesson for the *bon vivant*; yet, “if he be sometimes led unawares into a debauch, it must be expiated by abstinence and double exercise the next day; and he may take a little of *my* Magnesia Alba and Rhubarb, as a good antidote.” And pray Dr. Cadogan, how came the Magnesia to be *your’s*? I find the process of making it in Shebbeare’s *practice of physic*, printed seventeen years ago,* and yet your advertisement for making it was published but five years since. On this account I have seen Shebbeare, and he tells me, that when he read, your essay on the nursing of children, in manuscript, that he mentioned this medicine to you, before which time it appeared that you were a stranger to the composition; that you then inserted the name of it in your essay, and have advertised it in this manner. “When I first introduced and recommended Magnesia, now, above twenty years ago, I never intended it should be a secret to be advertised for the private profit of any man, knowing that a good me-

* *Magnesia Alba*, made of the earth of the *sal catharticus amarus*, precipitated by *lixivium tartari*, which, being washed clean and dried, yields more in quantity, and is more alkaline in quality, than the earth of nitre, or of any other neutral salt. (*Vcl.* 2. p. 290.)

medicine would find its way into the world without the contemptible method of advertizing." In what manner could Dr. Cadogan introduce this medicine twenty years ago which had been introduced many years before that time? how could he intend to keep that a secret which was known to Dr. Glas and Shebbeare, and communicated to him by the latter? and on what right does he call the *Magnesia bis*, when such is the true state of the case? and let me recommend to the doctor to be more temperate for the future, against advertizing quacks and lying advertisements. The fact is then, that you doctor had it from Shebbeare, and he ingenuously tells me, that in conversation with Dr. Glas of Exeter, who is *nemini secundus*, when they were talking on Hoffman's Magnesia, made from the bittern of nitre, that the doctor said, he was convinced that the salt, made from the bittern of sea salt, would be equally efficacious. In consequence of this, it was first made from that salt by Shebbeare. And yet you, Dr. Cadogan, in your advertisement, call it *your own prescription*. Is there not something also which shews your chemical knowledge to be new like all the rest? for you prescribe the bitter purging salt, *or that which hath been falsely called, and is commonly sold, for Glauber's salt*. You are, indeed, mistaken in the thing; for the bitter purging salt is shot from the bittern, which remains after the common salt is made, and is never called nor sold for Glauber's salt. The latter is made from sea salt with the addition of oil of vitriol, by the mixture of which the marine acid flies off, and the earth becomes united with the vitriolic, which being cristalized, forms a salt, unlike in every appearance to that of the marine bittern. Whoever is

well acquainted with these medicines can never think that one can be sold for another, any more than a turkey for a mallard.

And now comes a medical direction worth all the rest. “Or, if he cannot sleep with his unusual load, he may drink water, and, with his finger in his throat throw it up.” He must have a confounded long finger to get it into his throat. However this be one of the few rational ideas, which most assuredly mankind never had before the publication of the doctor’s dissertation; and, if it will perform what Dr. Cadogan says, we need no other remedy; we have nothing to fear; eat, drink, and be merry, hang sorrow, cast away care, and bid defiance to all gout, chronic diseases and doctors. Only remember the *water*, and to get a finger *long enough* to reach into the throat, and all shall be well. For the doctor says, “I have known some old soldiers, by this trick alone, taking their dose to bed with them, live to kill their acquaintance two or three times over.” And now I should be glad to know whether Dr. Cadogan were the physician who brought these acquaintance *two or three times over to life*, in order to their being so often *killed over again* by the old soldiers. I know but one instance of men reviving from death, after being killed by an old soldier, which is that of Mr. Bayes’s troops, when killed by Drawcanfir. If the doctor be the man, let him advertise *water and a long finger*, instead of *his* Magnesia, and I will insure him business enough, provided he will previously obtain a few letters, written to himself, to thank him for having thus repeatedly revived the subscribers; and a few affidavits to the truth of it by those who have been *twice* killed by the old soldiers and *brought to life* by the doctor, and are now living and ready to die
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the third time by the same means, to shew their confidence in his skill. And here I cannot but remark, that, as Dr. Cadogan introduced his *brochure* with the wisdom, happiness, health and long life of a voluptuary, as signal and as indulgent in luxuriousness as ever existed, in order to deter us from the evils of intemperance and incite us to seek the charms of sobriety ; so, in like manner, after having described the horrors of disease, and shewen the necessity of a reformation in our manners and diet, he has with a *wet finger* wiped off all our fears, and safely landed us on the delicious shores of sensuality. And now I would ask the doctor, if he had put this recipe at the end of St. Evremond's life ; and had only asserted, that this *water* and *long finger-work* were the means which that practical philosopher made use of to acquire all the felicities he enjoyed, whether he does not believe that the world would have been as much obliged to him, for this one *rational and new idea*, as for all the others in his *brochure* ?

Notwithstanding the preceding recipe the doctor adds, " one moderate meal a day is abundantly sufficient ; therefore it is better to omit supper, because dinner is not so easily avoided." I fear there are great numbers of honest people who cannot so easily find a dinner as avoid it. But then, " instead of supper, any good ripe fruit of the season would be very salutary, preventing costiveness, and keeping the bowels free and open, cooling, correcting, and carrying off the heats and crudities of his indigestion." Certainly Dr. Cadogan must have forgotten, that he pronounces acescents to be more pernicious, by fermenting in the stomach, than acids, already formed by fermentation ; that these acescents form the crudities, and

and acrimony, the aculeated and angular particles, which, as he says form these obstructions, which cause the gout; that ripe fruits, of all earthly productions, most spontaneously run into fermentation and acidity, when their juice is extracted, by dividing their consistency, either by mastication or other means, and put into motion by the heat of the stomach. Unless his old friend oblivion had signally assisted him could he have said, that such things are good at supper? will they not lie all night in the stomach, and ferment to acidities, and form the very crudities of indigestion, which he says they expel? Let those, who are subject to such acidities, try the experiment, and if the very contrary does not happen to that which the doctor says, then have all chemists been mistaken; the most fermentative of all productions have lost their power of fermentation; and nature hath reversed her laws, in complaisance to Dr. Cadogan's dissertation.

Let us now shew what may be the daily food of Dr. Cadogan's temperate man, and we may then discover, "whether these acidities and crudities and indigestion, will be more likely to be cured and prevented, than by the common diet of those who are afflicted with the gout and other chronic diseases." As he is to make but one meal a day, there is nothing for breakfast; and abstaining from food twenty-four hours is certainly a most salutary method. Because Sanctorius hath found, by experiment, that nature wants refreshment in sixteen. Suppose he has a pork steak for dinner; for "broiling is the best cooking" sayeth the doctor, this must be dressed so as to keep in all the red juices, no pickles, no pepper, no mustard, no bread, and a little salt; some boiled or stewed vegetables or fallads,
without

without oil, and with very little vinegar ; custards and creams, and small beer or water : will the pork not surfeit ? will the vegetables and creams not turn sour ? Dr. Cadogan hath forgotten that fresh meat mixed with vegetables does not prevent fermentation, as it is known by experiments on that mixture ; and therefore not in the stomach : and then at night, ripe fruit. Now, if any physician can prescribe a regimen that offers more probably to ferment in the stomach, and convert a regular gout into an anomalous, by the patient's being deprived of the spirituous parts of a little daily wine, or other fermented liquor of a generous nature, let the doctor himself evince the contrary in his great circle of science, or *hic cæstus artemque reponat*.

And now for the regulation of activity. “ His activity need be no more than to persevere in the habit of rubbing all over, night and morning, for eight or ten minutes.” I thought that this rubbing was to be the *activity of the two maid servants*, and the patient was to *lie still*. And why has the doctor lessened their frictions from five or six times a day to two ? consistency does every thing. And then when they have brought him to stand, “ he must walk three or four miles every day, or ride ten, or use any bodily labour or exercise equivalent to it.” If he can. “ In bad weather he may walk in the rain in a cloak round his shoulders.” Must it be a short cloak, doctor, because you mention nothing but its being round the shoulders ? “ And then he may walk in the rain, the only difficulty is to summon resolution enough to venture out.” I am more afraid it will be a greater difficulty to summon *legs to venture* out than resolution ; but when he hath ventured out, “ a little use will take off all danger

danger of catching cold, by hardening and seasoning him against the possibility of it upon that and all other occasions." Will walking in the *rain* by use, doctor, *harden* a gouty or even a sound man so as to secure him against all *possibility of catching cold*? As soon as this can be believed we shall see Hyde Park and St. James's filled with the best company in the wettest evenings; the Pantheon will be deserted, but in dry weather; Ranelagh be filled in the gardens, on rainy nights; and the room crowded in the dry; down comes the covered walk at Vauxhall; *no sunshine* and no dry weather will be the most salutary in the country; dry seasons and clear days in the city; I mean, untill the *rain* which softens all other things shall have *hardened* all mankind and *seasoned* them from the *possibility* of taking cold. And if I held a good estate, by this tenure only, *until such things could happen*, I would not sell it for less than the value of it as fee simple.

"Some, perhaps, says the doctor, may be reasonable enough to observe and say this plan of your's is very simple." A great many reasonable men have said, and some have found it so already in the sense of *simple*, as I have previously explained it. The reasonable man continues, "there is nothing marvellous in it; no wonderful discovery of any of the latent powers of medicine." None, indeed, sir. "But will a regimen, so easy to be complied with as this, cure the gout, stone, dropsy, &c. will it repair broken constitutions and restore old invalids to health?" the doctor's answer is "If I may trust the experience of my whole life, and above all the experience I have had of my own person, having not only got rid of the gout, of which I have had four severe fits in my younger days,

days, but also emerged from the lowest ebb of life, that a man could possibly be reduced to by cholic, jaundice, and a complication of complaints, and recovered to perfect health, which I have now enjoyed above ten years." And now, doctor, was your own person an old invalid ten years ago? have you, who are *now alive*, *lived to experience your whole life*? how do you know that you have gotten rid of the gout, cholic and jaundice unless you are dead? if this method hath succeeded, to cure the gout in you, is that an experience of your whole life that it would have cured the stone, dropsy, &c? and will it not be prudent in you to die as fast as possible, in order to establish the truth of your regimen, beyond all question? is not emerging from an ebb a new metaphor? Are ebbs things under water? And lastly, have you lived ninety-two years, like St. Evremond, to give an equal proof, that your regimen is as effectual to procure health, long life and happiness, as his voluptuousness? till these things be fully answered, I humbly presume we are not authorised to rely on the experience of your own person, "although you say I may with great safety pronounce and promise, that the plan here recommended, assisted at first with all the collateral aids of medicine peculiar to each case." What! *medicines peculiar to each case*, when you say, *all of them arise from the same cause*, and are to be cured by the same medication and diet? "correcting many an untoward concomittant symptom, pursued with resolution and patience, will certainly procure to others the same benefits I received from it and cure every curable disease." I am somewhat doubtful of the doctor's conclusion, that *one man must certainly* be cured by the like
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medicines which cured *another*. I fancy all other physicians have found the contrary to be too true. And now, after asserting that the return of the gout may be for ever prevented by his regimen; that he will be hanged if the patient die in the attempt, or be uneasy more than three or four days; Dr. Cadogan drops from the altitude of his promises like a shotten widgeon to the ground, and says, “ If this,” that is the perfect cure, “ be thought too much to promise, I beg it may be considered, that a life of bad habits produces all these diseases.” It is considered, doctor, and as you say “ nothing is, therefore, so likely as good ones, long continued, to restore or preserve health.” This observation hath been allowed to be true ever since intemperance made disease; and it is very new in Dr. Cadogan, that, after having promised the restoration of perfect health and the preventing of the return of disease *for ever*, together with the means of effecting it, he should tell us, what all the world knows, and what I have heard my grandmother most sagely pronounce a thousand times.

Having in this manner gone through my candid enquiry into the merits of Dr. Cadogan’s dissertation, like a man who surveys the dangers he hath passed, I tremble at the reception which this publication may find from the advocates of the doctor’s regimen. And now, too late, I perceive myself unequal to the arduousness of my undertaking; and I freely confess, that no man, as I believe, is capable of placing, in a *true light*, all the *new* and *rational* things which the dissertation contains. However, I have done my best; and I hope the doctor will be pleased with my *zeal of fairly exposing his merit*, although he may think me unequal to

to the task of fully considering it. And with this hope, wishing him all the encouragement which his few rational ideas, unknown before, do really deserve, I humbly take my leave of *him*, and proceed to prepare an Appendix for my readers.

APPEN-

A P P E N D I X.

. . . . *primo avulso non deficit alter
Aureus.*

VIRGIL.

MY Enquiry into the merits of Dr. Cadogan's dissertation on the gout, being now finished, notwithstanding the pains which I have taken fairly to expose that celebrated work to view, I am apprehensive it may appear, that these positions, which the doctor proposed to establish by his *new* philosophy, may not be so firmly erected as he imagines. In fact, many obstinate people do still continue to be persuaded that the gout is hereditary, periodical and incurable, notwithstanding the doctor's regimen and rational ideas. *Hæret lateri letbalis arundo.* I have somewhere read also that a very mean architect can deface a ten times finer building than he can design; and that a hand can destroy St. Paul's which cannot even build a hovel. The advocates of Dr. Cadogan may therefore, not improbably, consider him as a great architect, and me as a servile demolisher, between whom there can exist no reasonable degrees of comparison in intellect and desert. I do, indeed, confess, that a good building requires incomparably
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more knowledge to be well constructed, than the very best demands for its demolition. And yet, to pull down a house, which threatens to fall on the heads of a multiplicity of honest people, although it be not a work of genius, is a work of utility; and such performances are not deemed to be void of merit.

At the same time, to shew that I am as ready, as my abilities will permit me, to assist my fellow-subjects, whose health is as dear to me as to any *Englishman*, I shall take the liberty to lay before my readers what I have discovered, *by my alacrity in sinking and plunging into the immense abyss of ancient Greek and Roman learning, in hopes to find good precepts of health, and sure remedy for disease: and after all my pioneering into endless heaps of rubbish, what have I found at last but this?* That there is a certain cure for the gout. This cure was perfectly known to Hippocrates, and acknowledged so to be by Galen and Celsus, the truth of which hath never yet been disproved by any more modern physicians. Now, if all chronic diseases do really take their rise from the same causes, with those of the gout, as Dr. Cadogan does affirm; and that this gout is the representative which comprehends them all, then do I conclude, by whatsoever medicine, diet or operation the gout can be cured; that all the other disorders must, in like manner, yield before its efficacy.

Of one thing I am sure; it will cure a vast deal of vexation; for which Dr. Cadogan has proposed neither a dietetic nor medical remedy. Besides these it is attended with several other circumstances, which are very productive of happiness, and particularly adapted to preclude a certain disease that
very

very frequently affects the head in a manner most disagreeable to all persons whom it attacks.

Hippocrates was deemed *medicorum omnium facile princeps*, until Dr. Cadogan appeared *with his few rational ideas, which most assuredly mankind have never yet had, and performed the task so sincerely in proving that the ancients never studied nature at all, and that the moderns are all a set of quacks.* Notwithstanding this new philosophy of that doctor, in reverence to the most ancient and venerable Greek physician, I shall presume to publish the cure of the gout which he so peremptorily pronounces to be infallible; and which Galen and Celsus confirm, some centuries after the death of the divine old man. There is not a *dilettanti* living, who does not acknowledge the immense merit of pioneering into ancient rubbish, and thence of bringing back to light the utensils, instruments, furniture, old nails, door hinges, &c. of the Greeks and Romans, who lived at a distance of more than the last fifteen hundred years. Of the vast utility of these things the legislature of Great Britain, to its immortal honour, seems to be more truly sensible than that of any other kingdom in Europe. For, during the last sessions of parliament, they taxed the nation with the sum of eight thousand pounds, to purchase, from Sir William Hamilton, his majesty's minister at Naples, a most valuable and necessary collection of Herculaneum chamber-pots. And this, I presume, being a business of so much importance to the public welfare, may afford an unanswerable reason for the seeming inattention, of the said last sessions of parliament, to the distresses of the labouring and industrious of this kingdom, which arise from the exorbitant prices of provisions. For, are not two such great affairs too much for the

labour of one year? and will it not be time enough to relieve these low, poor, starving, useful people when the rents of the estates, of our honorable representatives and defenders of our rights, are risen so high that it may be impracticable to reduce the prices of their productions.

And although, in this place, I do not pretend to give to mankind one rational idea which they have not anciently had; yet I hope the task of pioneering and of discovering the subsequent remedy, where it lay hid in Grecian rubbish, being so happily accomplished, it may entitle me to some reward. For notwithstanding I do not presume to place the restoring of an *infallible cure* for the gout, on the same level with the national service of bringing into these realms the celebrated utensils in which the ancients did *make their water*; yet, I presume it will not be deemed as altogether useless to some individuals of my fellow-subjects: and I most sincerely wish, that the young and voluptuous may not prove incorrigible and reject the never-failing means of for ever preventing them from being afflicted with this remorseless ravager, the gout.

And now I shall fairly and fully disclose this arthritic and infallible remedy in the words of Hippocrates, aphorism the 28th, section 6th, Ευνουχοι ο ποδαγριωσιν, ουδε φαλακροι γιγνονται. *Eunuchs are never afflicted with the gout, nor do they ever become bald.* And in this place, were I not assured of Dr. Cadogan's great contempt of pioneering into Greek rubbish, or of his wonderful capacity in forgetting what he hath read, I should be much inclined to think that he has concealed his knowledge of this certain cure, from a prepossession partiality to Venus whom he hath so unreasonably favoured in his dissertation, as to attribute no part of the gouty and chronic complaints.

plaints to her influence and operation. And although esteem gratitude to be a great virtue, yet I cannot but say, that the doctor hath rather been criminal in preferring the serving of an old friend to the cure of so numerous a set of subjects as are the arthritics of this kingdom.

And here I must represent the singular advantages which will attend this method of cure above all others of which I have the least knowledge. First, it is infallible, not only for the gout but for all other chronic diseases on Cadoganian principles. Secondly, it is effected by a single operation during life. Thirdly, the time of performing it will not exceed a few minutes. Fourthly, it rescinds the source of an innumerable quantity of mental evils which will otherwise continue to vex mankind.

On these accounts I cannot but most heartily recommend the practice, and exhort the young and voluptuous to submit themselves to the operation as speedily as possible, and not to remain, pertinaciously incorrigible, in the preservation of these mischief-making parts, which are so fatal to their health and felicity. As to the veteran debauchees, whom the habitude of whoredom hath left impotent in body, and tormented with desires, which cannot be satisfied, I would willingly keep them in their present state of contempt and torment, were it even practicable to cure them by the operation. They have done all the mischief they can do and are justly suffering the pains and penalties of their transgressions.

I would have the young reflect on the sums of money they may save by no longer keeping harlots, by not being caught in adultery, nor exposed in the courts of law and sometimes to the perils of single combat. Besides, as since the death of the Marquis of Granby, it is no longer the fashion to be
bald,

bald, for those gentlemen who wear their own hair, can the preserving, in full honour, that most ornamental part of the head, be considered as an inconsiderable encouragement to the adopting of this method of cure? more particularly as the heads of such young men have very rarely any other means of recommending their owners.

I am perfectly persuaded how difficult it is to eradicate the stubborn effects of ancient prejudices; that all possible arguments must be used to overcome an ill-founded opinion of the impropriety of this method of medication: and therefore lest the preceding advantages, which must accrue from the use of this remedy, should prove ineffectual, I will endeavour to add such as may corroborate their energy. If I am not mistaken the laudable qualities, which are at present the most in fashion, are keeping mistresses, debauching friends wives, cheating at gaming tables and at Newmarket, indulging in every excess and refinement in eating and drinking, and speaking in parliament. As to the first, it is generally allowed, that it is the reputation of keeping harlots for others, and not for their own enjoyment of them, which constitutes the most characteristic and honorable part of the keeper. And this may as effectually be done, after the operation as at present. As to the second, to the pleasure of *deceiving* their friends, by seducing their wives, these *reformed* young *things* will have to add *that* of *deceiving* their ladies also, which circumstance encreases a single into a double delight. As to the affair of cheating at play, coolness of temper, and fixed attention to the game are reckoned the best qualifications for such as are professors of that honorable science. This operation hath a most wonderful effect in keeping men cool,
and

and detaching their thoughts from the intrigues and rendezvous of concupiscence; and thereby fixing them to their games alone. Besides, if these young gentlemen shall thereafter chuse to ride their own horses, at Newmarket, this operation makes their feat less perilous. And then, by suffering this single abscision, all the delicacies of the table, both in meats and wines, are disarmed of the power of producing either gout or any other chronic disease; and the sensualist and epicure may riot in dainties, both native and exotic, with impunity.

Such being the improvements of health, pleasure and profit which must attend the young voluptuaries who shall have reason and resolution to despise the prejudices of their ancestors in the preceding instance; I am now come to the last and very fashionable quality, that of speaking in parliament. And here, indeed, I cannot but propose an amendment in our constitution. It is, that it be for the future enacted, that orations, like David's psalms may be either *said* or *sung* in parliament. Innovations in a state, however, are things which I do not much admire; but since the old custom of forming *men* to *laws*, which is right and practicable, hath been so long neglected; and the new mode of forming *laws* to *men* hath been so long adopted, which is wrong and impracticable, I am obliged to observe the same method. Besides this, there is yet another reason; rhetoric is a subject which requires the studying of Aristotle and Quintilian, as to principles; of Demosthenes and Tully as to imitation; and our present most rising speakers declare for *nature alone*, who, according to their sentiments, feeds unfledged parliament men with oratory, as pigeons feed their young with peas by first

first taking them into their own stomachs and then returning them to those of their progeny.

There is yet another reason also for my proposing this reformation; it is, that the old and celebrated operator at Battersea, who used to cut such persons with singular success, for the simples, is dead; and alas! he hath left no successor, who is equal to that important office. And this truth, I am apprehensive, too plainly appears, from what is constantly heard in parliament and in all other public and private places of resort. Such being the melancholy case, as sense is necessary to an orator, as no man now remains who can extirpate folly by manual operation, and no young speaker will take the pains of acquiring knowledge by study, it seems expedient, for the service of the nation, that singing be substituted in the place of speaking; and that individuals may rise in the state, as they do in the Opera-house, according to the excellence of their voices and their skill in sounds. And this I propose as a further encouragement to the undergoing of the aforesaid operation, as being the only true foundation on which they can build their hopes of being ministers, or of making themselves good for anything.

The advantages which will arise from this innovation will be very conspicuous. First, those who now speak, and to whom no man will listen, because of their want of sense, may become the leaders of their parties and the favorites of the people by being great in *recitative* and *song*. Secondly, as it is generally allowed, that the passing or rejecting of bills is determined before they are brought into the house, sense is now useless, as it can make few or no converts on either side; and wherefore may not a question be as well debated in *cantabile* as in *rhetoric*. Besides these, as things now stand, but one

one orator can *ſpeak* at a time, whereas all thoſe of one ſide, may then, at the ſame time, be employed in the ſervice of their country, in ſinging the different parts of muſic, either in duets, trios, or quartetts; the others joining in the reſpective choruſſes. And this, I humbly preſume, will contribute, not a little, to expedite buſineſs, to *ſhorten* the ſeſſions of parliament, to keep the houſe in *harmony*, and to tax the nation to ſome *tune*; all which things are extremely deſired by this free nation. For the Engliſh, of all people, are the moſt eaſily to be ſung *out* of their money; and the Scotch the moſt eaſily to be ſung *into* it. And, in this manner, the two parts of the *union* may be truly ſaid to be in *unifon*.

Having delivered thus much, in order to induce the young Macaroni, by one operation; to preclude the gout and all chronic diſeaſes for ever, as hounds are prevented from running mad by being wormed, and by ſhewing them alſo how worthleſs that is which will be cut away and how inſtimable the pleaſures are which will be added. I ſhall juſt hint, that I do not intend that the benefit of this operation ſhall be imparted to the uſeful and laborious; becauſe theſe, as beings of an inferior order, ought to be permitted to increaſe and multiply, in order to continue ſuch ſort of bipeds as are requiſite ſervilely to miniſter to the wants, deſires and purſuits of the idle and the worthleſs, who are of a *ſuperior* order, both in nature and in life. Beſides this, it may not be an impolitic circumſtance to prevent that preſent aſinine-tailed race of quality from propagating their ſpecies, in order to reſcind the national diſgrace of ſuch exotic animals, and to reſtore to this realm, the limbs, manhood and intellect of Engliſhmen.

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I come now to the cure of vexation, which, as Dr. Cadogan assures us, is a very fruitful parent of many bodily evils. And in this place I think there seems but little reason to attempt a proof, that cuckoldom is a chronic disease, which is very epidemic at this time; and of consequence, that husbands are not a little *vexed* by the evil of consciousness that their estates will be inherited by children who are not of their begetting. Now what remedy can so effectually extirpate the cause of this vexation in husbands as this operation, for the radical cure of the gout, on their wives gallants? will not peace of mind be perfectly restored to many an aching heart, which now labours under disorders arising from vexation? And now I would ask every considerate man, whether the task, which Dr. Cadogan declares was left for him, hath not been performed by me? whether he or I have given a few rational ideas, which most assuredly mankind have never had? whether his or my words have no kind of ideas? and who is, in fact, the greatest benefactor of human kind? And here I take leave of my readers and remain impatiently waiting the coming of that great day, when the great circle of all chronic diseases shall be opened, which Dr. Cadogan hath promised to bestow on mortal man, in order that I may display its full excellencies by another enquiry, so that the physical, metaphysical, and moral philosophy, which it contains, and all its other merits, may be as fully considered, and as fairly exposed to view, as those of the dissertation are in this publication.

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